STUCK IN THE MIDDLE WITHOUT A COHERENT STRATEGY: AN ALLUSION TO FUTURE WAR

A Monograph

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Focusing on the future is inherently difficult without an existential or quantifiable conventional threat to Western security, and a lack of continual predictability makes it problematic at best. Yet, Western militaries currently sit stuck in the middle, with strategies defined by operational effectiveness not strategic positioning. Juxtaposed to this is an environment whereby threat streams continually erode the advantages afforded by high technology dominance through seeking to attack vulnerabilities indirectly. This monograph sits in a space that questions current strategies of technological superiority. Its importance is in framing strategic choice and the case in point of short-lived relative advantage, whether dictated by internal policy, threat, or an inability to translate the technology into truly effective capability.

The compounding effect is a lack of overall strategy and the view that aspiring to technological dominance has supplanted the traditional logic of strategy for development. This creates military subservience to only the driving forces of the day without a clear understanding for the future. Analyzing trends in the future security environment demonstrates that a lack of change may not spell the end for wider US hegemony and military dominance. However, the relative nature of comparative advantage suggests that this is downhill slope.

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ABSTRACT

STUCK IN THE MIDDLE WITHOUT A COHERENT STRATEGY: AN ALLUSION TO FUTURE WAR, by Major Andrew R Nicklin, British Army, 90 pages.

Focusing on the future is inherently difficult without an existential or quantifiable conventional threat to Western security, and a lack of continual predictability makes it problematic at best. Yet, Western militaries currently sit stuck in the middle, with strategies defined by operational effectiveness not strategic positioning. Juxtaposed to this is an environment whereby threat streams continually erode the advantages afforded by high technology dominance through seeking to attack vulnerabilities indirectly. This monograph sits in a space that questions current strategies of technological superiority. Its importance is in framing strategic choice and the case in point of short-lived relative advantage, whether dictated by internal policy, threat, or an inability to translate the technology into truly effective capability.

The compounding effect is a lack of overall strategy and the view that aspiring to technological dominance has supplanted the traditional logic of strategy for development. This creates military subservience to only the driving forces of the day without a clear understanding for the future. Analyzing trends in the future security environment demonstrates that a lack of change may not spell the end for wider US hegemony and military dominance. However, the relative nature of comparative advantage suggests that this is downhill slope.

This does not ignore the view that technological dominance has enabled the Western Way of War, mitigating a perceived lack of mass with quality. However, recognizing current fiscal and resource constraints the previous planning assumptions do not apply when emerging from a decade of conflict. Returning to a theoretical base of first principles offers a way to adapt in the face of institutional bias, recognizing the lessons from history. This is not an easy task and there remain no clear answers for dealing with an uncertain future. A phenomenological approach tackles this to understand this environment from the perspective of the technological, cognitive, and organizational domains. Synthesis of these driving factors sets the conditions for developing greater coherence to strategic thought and the ability to translate potential into strategic advantage. Only by reevaluating can Western forces escape current dissonance between strategy and the application of military power.

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A SAMS' monograph is a labor of love, written for the satisfaction of only oneself. The oxymoronic nature of this comment speaks volumes to the frustrations of all students embattled in the conflict that is the delivery of a coherent piece of work for submission.

Throughout, my greatest thanks continually go to my wife, Hannah. Suffering not only this monograph, but also equally the high demands of military service with our baby daughter, no words can describe the support you provide. I am always continually in awe of all you are and all you do.

To both my ILE and SAMS colleagues, a very grateful thank you. Afforded the privilege and honor to study in the USA, constant 're-education' on both my own history and the essence of military thought sees a more professionally effective officer leave this institution. This is solely down to the continued discourse, banter, and cultural apperception of two years spent here from lifelong friends that never let the British officer off the hook.

As we collectively move forth operationally in the continued service of our two great nations, the following is an apt reminder of the vocational nature of our employment in achieving continued military excellence.

Whereof what's past is prologue, what to come
In Yours and my Discharge.
—William Shakespeare, *The Tempest*

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ACRONYMS

CBRN	Chemical, Biological, Radiological, and Nuclear
CJCS	Chairman of the Joint Chiefs of Staff
NATO	North Atlantic Treaty Organization
OODA	Observe, Orient, Decide, Act
QDR	Quadrennial Defense Review
RMA	Revolution in Military Affairs
SAMS	School of Advanced Military Studies
UN	United Nations
US	United States
USA	United States of America

ILLUSTRATIONS

INTRODUCTION

"Would you tell me, please, which way I ought to go from here?" (Alice)
"That depends a good deal on where you want to get to," said the Cat.
"I don't much care where –" said Alice.
"Then it doesn't matter which way you go," said the Cat.
"–so long as I get *somewhere*," Alice added as an explanation.
"Oh, you're sure to do that," said the Cat, "if you only walk long enough."[1]
—Lewis Carroll, *Alice's Adventures in Wonderland*

This is a monograph about the future. The core theme represents a hard look at the Western strategy of technological superiority inherent to its Way of War, coming to grips with the implications of this continuing strategic narrative. There are no easy or definite answers. The traditional approaches for the recent application of military power have not delivered strategic success. It is possible that the 'war after next' could be lost through misunderstanding threats, seeing less sophisticated opponents negate the perceived technological might of the West. The argument that current conflicts sit *sui generis*, served by individual logic, is a fallacy that excuses the requirement to think differently.[2]

This does not detract from the tactical successes achieved in Iraq and Afghanistan, with the anti-thesis that an approach of rapid technological innovation in adapting to emergent battlefield challenges ensures continued military advantage. However, detailed examination suggests that as strategic success this is delusional, as the lack of real challenges made conflicts one-sided; being number one has an inherent problem of positive self-deception. It equally ignores the ability of the enemy to force the hand of policy makers, as evidenced by a decade of war with limited ability of disengagement. Importantly, the world is now seeing an adaptive

[1]Lewis Carroll, *Alice's Adventures in Wonderland and Through the Looking-Glass* (Oxford: Oxford University Press, 2009), 45.

[2]In examining today's emergence of hybrid warfare, Colin Gray argues that while it may be an amalgam of differing approaches, the essence of the surrounding context is nothing new and has been evidenced previously. See Colin S. Gray, "Categorical Confusion? The Strategic Implications of Recognizing Challenges either as Irregular or Traditional" (Monograph: Strategic Studies Institute, Carlisle, PA, 2012): vii.

enemy of increasingly varying capabilities, exacerbating the challenge for capability planners.

Overall, Western powers have not yet truly linked technological response to threats and therefore attempts to achieve military technological dominance have supplanted the traditional logic of strategy acting as the driver for development.[3] This is its thesis. In terms of military strategy, a fresh approach linking military effect to strategic policy is needed. Without it, the USA and its Western allies continue to remain stuck in the middle of competing strategic choices, ignorant to a clear approach to the problem space. Thus, response is conditioned only to the driving forces of the day, rather than longer-term coherence. This frames strategic choice and the case in point of short-lived relative advantage, whether dictated by internal policy, threat, or an inability to translate the technology into truly effective capability.

Highly flexible and adaptive forces can make this approach effective in supporting policies that often change by administration, but are unlikely to be sustainable beyond the medium term. Retaining qualitative superiority in the current approach means staying at the cutting edge of technology in every area, compounded by increasing fiscal costs in a world of rapid technological advancement. Advanced technologies do make military forces more effective, however in an era of reducing or flat budgets this can only come at the cost of personnel.[4] A highly technological force with limited manpower may equal success but is an anathema to meeting all requirements. Discussion is equally made on the advantages of technology; this is less about divergence but a synthesis of what it means to continue on this path, to enhance the ability of decision makers to develop coherent strategy.

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[3]For the purposes of this monograph, technology is broadly defined as a collection of pieces of knowledge, of which some are physically embodied in devices and equipment.

[4]Due to the rate of technological change the cost of military technology rises above the rate of inflation, ignores the relatively flat nature of defense budgets. For evidence that this is not a new phenomenon localized to the twenty-first century see Norman Augustine, *Augustine's Laws and Major System Development Programs* (New York: American Institute of Aeronautics and Astronautics, 1983), 44, 53-55; Philip Pugh, *The Cost of Seapower* (London: Conway Maritime Press, 1986), 31, 143-144, 258.

Yet, the Technological War is infinite between competing states seeking military strength. Technological breakthroughs often provide decisive advantage to the side best able to exploit them in a short time frame, compounding this competition. Therefore, for deterrence, military technology ranges persuasion through coercion. Advantage is achieved through the application of military power achieving strategic objectives, theoretically delivering dominance through technological superiority. Force multipliers are idiomatic as the language by which to judge technological advances, with the asymmetric application of force the assumed norm. This reinforces the continuing assumption of a favorable imbalance should conflict occur, with war seen as a pre-condition for peace. Strengthening this approach, the litany of military history exhibits the reoccurring evidence of this revolutionary nature to technology's narrative. To ignore its impact is a fallacy.

Here, advancing technology causes the conduct of war to change and change again.[5] The accepted axiom is therefore that technological supremacy confers military advantage, and for many the illusion of strategic advantage. In this, technology makes war safe for the policy makers. Yet, to properly conduct technological war, strategy must be the driving logic. Without it, technology is the driving force, with strategy subordinated to merely the operational use of systems.[6] Worse yet, the weapon becomes the central tenet to the master concept of stability.[7] This is the quandary that faces Western militaries in an era of rapid technological change. Strategies of technological superiority sit central to the Western approach to war. Breaking out

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[5]Martin van Creveld, *Technology and War: From 2000 B.C. to the Present* (New York: The Free Press, 1989), 297.

[6]It is recognized that this sits counter to Stephen Van Evera's view that there is not necessarily a causal link between military technology and strategy. See Stephen Van Evera, *Causes of War: Power and The Roots of Conflict* (New York: Cornell University Press, 1999), 162.

[7]Colin Gray discusses this view of technology, providing the view that war and warfare must be seen in context. Critically, this contextualization of technology a better way of understanding its place as supporting element to strategic effectiveness, not the central pillar. See Colin Gray, *Another Bloody Century – Future Warfare* (London: Phoenix, 2005), 121-128.

of this quagmire of the middle means selecting a more coherent strategy. This must truly balance the risks of maintaining relative advantage through technology against the threat space. Without this, strategic advantage is a misnomer for Western forces in the future, with a continued confluence of operational effectiveness and policy more likely.

Therefore, the extreme differences between Western, and explicitly US, military strengths to others directly affect the strategic calculus determining military and grand strategy.[8] As such, weaknesses inherently exist in the ability to adapt in a congested space of rapid technological advancement across a very broad requirement, eroding advantage in real terms. More than technology alone determines the high degree of technological asymmetry that Western strategies seek to leverage. The current privileged position of US pre-eminence in terms of military technology is not an inherent right. The 'other' in the future views technology and action very differently; therefore, symmetric constants of planning are invalid.

This lack of symmetry sits unpalatably with current Defense planning. Current approaches seek to achieve longevity in strategy through the use of symmetric planning constants in determining the ratio of military advantage. The humility to accept the need for change is made even more difficult without an existential threat to US and Western primacy in the immediate term. As such, the nature of discussion in this monograph will likely have a polarizing effect in readers, especially in the military community to which it is aimed. This is expected. Strategy is as much about finding problems as it is finding solutions, framing strategic choices. Therefore, this is not an exposé on a hidden truth. To do so equals a grandiose simplification of war. In this, nothing said here is inherently new, but it cannot sit in the background during a

[8]This difference in the understanding of the military calculus sees military technology made the independent variable, with strategy subsumed to the position of dependent variable. This may be realistic during enduring conflicts, such as World War I, where innovative technology was needed to change the offense-defense balance to the Allies favor. However, this view of the strategic calculus is only relevant during these times.

period of change. It is continued discourse that drives the evolution of military thought and provides the rationale for this monograph, analyzing the effects for the future.

Organizing Logic

For the reader, a descriptive theoretical narrative throughout the monograph assists in understanding the contextual variations that can exist for a continued utilization of current thinking. From the reader's perspective, the explicit outcomes are interwoven into the framework of dialectic discussion. This is a deliberate mechanism to enable abstraction and understanding of the inherent bias that exists within a potentially incoherent reality, that technological superiority delivers strategic superiority for the future. As such, it is a macro level analysis that can easily be rebutted by individual micro level examples, but not as a coherent whole. Bias towards this approach needs understanding, as while it is unlikely to be removed, it is important to align cause and effect. Greater understanding can only enhance the ability to leverage the greatest opportunities while mitigating the risks.

Section One, Star Gazing into a near future of cognitive warfare, examines the emerging trends in the future security environment. It questions the positioning of Western states in meeting the changes to this environment and the emergent strategic vulnerabilities that come from retaining the current approach. Building from this, Section Two discusses the relative nature of comparative advantage, critically in relation to strategic surprise. It contextualizes the importance for change and the difficulties that inherently exist between strategic thought and positive self-deception. This creates trending effects with reacting to strategic surprise as the driver for militaries, rather than shaping strategy against emerging trends. As illustration, three short historical case studies are included to aid the reader in understanding the difficulties in developing coherent and consistent strategies and the implications for the future.

Further examination of the determining factors in the contemporary environment is made in Section Three, Technological Superiority – The Current Determinant. This examines the

manifestation in Iraq and Afghanistan of the post-Cold War security decisions, outlining invalid assumptions of relative advantage as a driving factor. As synthesis for the reader, return is made to a theoretical base in Section Four, Strategic Scope versus Strategic Strength, providing a way of viewing strategic choice for the future. These choices are aimed at maximizing military advantage within the security environment and while there is no single solution, a theoretical framework is presented to understand the competing forces within an environmental frame of war. The final chapter is one of reflection, looking to a possible way ahead for Western militaries, cognizant of the need to understand oneself, the environment, and the 'other.'

Methodology – A Route from Technological to Strategic Superiority

This subject does not suit a more traditional approach. It is therefore deliberately designed as an exploratory piece, requiring a qualitative approach and theoretical abstraction to provide reasoned judgment for the future. This requires understanding of the possible contexts of future operating environments through historic analysis, military reflection, while developing on existing theory. A methodology of grounded qualitative analysis developed an understanding of the meta-theoretical variables, against a three-perspective approach of people, processes and technology.[9] This creates an interpretative view of future technological, cognitive, and organizational domains. Commonality in trends and logic enable understanding for the future, validating this phenomenological approach.[10] The intent is for teleological synthesis.

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[9]From a research standpoint, this consisted of developing a theoretical framework from an inductive foundation, subsequently utilizing a convergent methodology to achieve theoretical saturation. Validity of sources in such an exploratory and subjective study is acknowledged as a point of contention, therefore all sources for understanding, however fringe or esoteric were considered. This is not intended to necessarily provide a fully accurate picture of tomorrow but enhance the development of coherent strategy.

[10]The preliminary hypothesis focused on the fact that change from a strategy of technological superiority was needed, allowing consideration to be made of all congruent and incongruent factors. This shaped research against: In preparing for future conflicts, what underpinning strategy is needed to develop and subsequently shape the future use of force? What will define the character of future conflict in an age of flat and fast information exchange and global technological proliferation? What are the imperatives to change the current military paradigm juxtaposed to the implications of maintaining the status quo?

STAR GAZING INTO A NEAR FUTURE OF COGNITIVE WARFARE

> It is a supremely dangerous error to assume that technology is a solution for the problems of war. A Strategy devised by technocrats, based solely on the superiority of weaponry is no strategy at all. Machines do not win wars.[11]
>
> —Barry Strauss and Josiah Ober, *Anatomy of Error*

Western military advantage is now synonymous with the exploitation of all available technology to think and, more imperatively, adapt quicker than every adversary. However, technological proliferation and greater independence mean that previously deemed technologically unsophisticated actors are now able to operate in a flexible manner against any target, before disappearing in the 'electronic noise' of society. Yet, strategic decision-making at higher echelons is often too slow to exploit counter-terrorist operational advantages; without change entities will strike unopposed. Consequently, the traditional nature of power is changing.[12] It is anticipated the interconnectedness of socio-economic, political and military dimensions will shift the global landscape further out of its traditional equilibrium in the next two decades.

Social electronic interdependence and the net reduction in nation-state boundaries mean that electronic attack, CBRN, and space have all become viable domains for contest.[13] This proliferation of technology will see a redefinition of strategic nodes of interest at the speed of a breaking news story. This compounds the ability of traditional military approaches to identify, prevent, pursue, and defeat adversaries. A responsive posture is no longer adequate and those

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[11]Barry S. Strauss and Josiah Ober, *Anatomy of Error* (New York: St Martin's Press, 1990), 10.

[12]From a security standpoint Anders Fogh Rasmussen, the Secretary General of NATO confirms the norm with a decline in Western influence and the creation of a power vacuum filled by others with differing interests. Reported by Mark Urban, "NATO's Anders Fogh Rasmussen sees power slipping away," *BBC News World*, 3 February 2014, (accessed 4 February 2014).

[13]Current conflicts have seen tactical effect regularly delivered using capabilities that were previously designated as operational and increasing strategic. For example, the use of strategic intelligence capabilities is now prolific at the tactical and operational levels, challenging the traditional paradigms that separated capabilities within clear roles and responsibilities.

best able to anticipate and mitigate these threats will likely shape the future character of war.[14]

Setting an Initial Context

Currently tackling the future with technology is based on equipment programs such as the Joint Strike Fighter (F-35), built on principles of advanced weaponry for a visualized World War III. Ironically, this pushes the technological boundaries in areas where the United States is already overwhelming superior, reinforcing an outmoded style of warfare.[15] It is therefore likely that nothing will test US capabilities in a symmetric conflict played out along Western rule sets. However, in the long term this trends towards disruptive innovation, as threats seek to mitigate these technological strengths. The *Quadrennial Defense Review (QDR) 2014* provides some impetus towards challenging this view of technological dominance.[16] While dissonant in providing explicit ways of execution, prioritization, or clearly identifying the threats, the logic of US national security interests is understandable. Yet, these ends appear built on expansive aims using the logic of continued military dominance. While realistic in a historical view of technology, resource constraints ensure that reduced means will never achieve these using current approaches.

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[14]While not making the theories of Sun Tzu and Clausewitz redundant, future warfare, involving elements such as cyber challenges traditional domain perspectives. As the mediums for access, this may necessitate a change in the type of military professionals that fully understand the technical dimension. For an excellent discussion on this cognitive balance, see Colin Gray, *Another Bloody Century – Future Warfare*, 98-128.

[15]Worse yet, by pushing the boundaries of this 'technological edge' against an immaterialized threat has seen the Joint Strike Fighter over budget, behind schedule, with numerous redesigns, and critically not yet fully functional. Equally, the alignment of fiscally constrained allies to this procurement means that they must now make strategic choices on reducing other capabilities that may have greater relevance for the future battlefield. Robert N. Charette, "F-35 Program Continues to Struggle with Software," *IEEE Spectrum* (19 September 2012): 1; Stephen Trimble, "US military unveils possible F-35B redesign in sweeping budget reforms," *Flight International* (6 January 2011): 3-7.

[16]US Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Government Printing Office, March 2014), 22.

It is not a new phenomenon to question this logic. In 2002, the Millennium Challenge exercise sought to test the concept of a high-technology US force against a low-technology enemy.[17] In a manner consistent with mitigating the strength of the opponent, Lieutenant General Paul van Riper, acting as Force Red, overwhelmed US forces and brought the exercise to a standstill. How did he achieve this? Ultimately, by refusing to 'play by the rules.' He challenged and negated the high technology assumptions made by the United States of a symmetrically thinking enemy. The high technology of US forces was 'too high' and ignored older models of warfare. Using decentralized, loosely coordinated groups operating according to swarm logic, van Riper overwhelmed and defeated his enemy. Deflecting the enhanced 'intelligence machine' of the US, low technology means deceived US forces. Low technology mass achieved victory against high technology. The response: reset the exercise and ignore the problem, scripting it to a successful conclusion. Failure to integrate this military thought ignores the fact that the US Way of War was in danger of invalidation.[18] Van Riper's view: no amount of new technology will change the uncertainty of war and attempts to do so ignores the real requirement to think differently.[19]

Against the QDR, this sits as an important reminder while focusing towards the future. The era of infinite resourcing is diminishing, compounded by exponential technology costs, and a lack of fiscal fortitude. Ends are remaining fixed and the means available reducing. The result is disruptive and potentially revolutionary change to the military business. Absence of the understanding of risk or providing the necessary guidance illustrates the lack of coherent strategy

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[17]Reported by Julian Borger, "Wake-up Call," *The Guardian* (5 September 2002): 5.

[18]For discussion on this view of this endemic institutional failure to recognize the problems inherent with this approach see Sean Naylor, "War Games Rigged? General Says Millennium Challenge 02 'Was Almost Entirely Scripted," *Army Times* (16 August, 2002): 1.

[19]NOVA Interview with Lieutenant General Paul van Riper, "The Immutable Nature of War," 4 May 2004, (accessed 1 April 2014).

and the logic to link military power to achieving strategic effect. Here, the Chairman of the Joint Chiefs' assessment is the most revealing and the only part of the QDR with substance. Addressing strategic risk, the lack of planning constants, and the need for innovation, he identifies it will be necessary to challenge the current ways of warfare.[20] Without this, less capable military power is the resultant dividend. Yet, in understanding the realties of the future-operating environment, what is the competitive strategy by which to pro-actively deliver this strategic advantage? Strategic dialogue is essential is balancing the aspiration of strategic visions with realities of action.[21]

Realities of the Security Environment

The future security environment will be dominated by the transition towards multi-polarity by 2040.[22] Within this, while the concept of the state will remain central to most countries' concepts of power boundaries, increasingly complex relationships will exist with multiple non-state actors.[23] Technology will sit as the enabler for commonplace proxy activities, with novel tactics in the use of technology delivering significant advantage.[24] Historical

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[20]US Department of Defense *Quadrennial Defense Review Report,* 63-64.

[21]This sits central to the Clausewitzian view of strategic dialogue as the balance between the people, chance, and policy. The logic of the need for this strategic dialogue in the current environment is outlined very effectively in Emile Simpson, *War From the Ground Up: Twenty-First-Century Combat as Politics* (Oxford: Oxford University Press, 2013), 227-245.

[22]Joseph S. Nye, *Understanding International Conflicts – An Introduction to Theory and History* (New York: Pearson International Edition, 2009), 291.

[23]The new economies on the global stage will be predominantly Chinese and Indian. This suggests the likelihood of a redistribution of power towards Asia. This creates a fulcrum point for the reemergence of Russia as the interface straddling both East and West. This will be significantly influenced by Goldman Sachs' macro-economic descriptor of the Next-11 (N-11), those emerging countries likely to see the greatest growth. For a follow-on discussion from the original N-11 descriptor by Jim O'Neill, see Dominic Wilson and Anna Stupnytska, "The N-11: More Than an Acronym," Global Economics Paper No. 53 (Goldman Sachs Economic Research: Goldman Sachs, 2007).

[24]This recognizes that technology in itself does not equal new tactics but that emergent tactics often seek to maximize currently available technologies. This, in turn drives technological development, creating a fulcrum upon which the evolution of military use shifts.

precedence suggests that periods of power transition create periods of instability, due to competition between states and alliances readjusting their relative global positions. This is a return to great power politics, often executed through great power conflict.[25] This instability is likely to extend well beyond 2040 with relative strength defined through continuing increases to the global trend of greater independence. This interdependence will widen the perceived gap between those that sit at the center of the global conduit, and the rest of the world.[26] The requirement for military intervention is likely to increase as traditional structures are increasingly challenged.

The radicalizing and uniting effect of continued military intervention will likely see a rise in non-state actor threat groupings.[27] This recognizes the inherent complexity to choices of intervention; doing nothing may see emergent instability, while action can provide the catalyst to unify smaller groupings. These non-state actors will continue to blur traditional boundaries of terrorism, crime, government, and military power, requiring adjustment to contemporary power levers.[28] Competing ideological agendas will see the military paradigm inclusive of a heavily

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[25]As if to illustrate the point, Russian President Vladimir Putin's military intervention into the Ukraine demonstrates the jockeying for positions and power play that exists during such a period. Gradually building pressure for international action, Putin's actions challenge the traditional status quo, setting NATO potentially on a collision course for conflict. See Igor Sutyagin and Michael Clarke, "Ukraine Military Dispositions: The Military Ticks Up while the Clock Ticks Down," *RUSI Briefing Paper* (April 2014). Does smaller, as outlined in QDR 2014, really mean less capable in response to this changing conflict base. See US Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Government Printing Office, March 2014), 64.

[26]It is not expected that Brazil, Russia, India, and China ascendency will crest in the medium term (out to 2030), however the decline of the traditional liberal economic model with an alternative delivered by the Beijing Consensus. The economic collapse of 2008 has probably only deferred not degraded the likelihood of this emerging as a truly global, rather than regional alternative, with regulation to prevent the insatiability of capitalist agendas.

[27]Increasing globalization enables transnational networks to enhance influence and capacity to act directly against states, either through hard or soft power. Robert Cox, 'Beyond Empire and Terror: Critical Reflections on the Political Economy of World Order,' *New Political Economy* 9, no. 3 (September 2004): 307-323.

[28]This phenomenon is representative of the cultural clash envisioned by Samuel Huntington in 'The Clash of Civilizations?' *Foreign Affairs* (Summer 1993): 22-49; *The Clash of Civilizations and the*

contested virtual ungoverned space, necessitating an increase in the leveraging of soft power.[29] While the competition for energy is well documented, geo-strategic decision-making will be shaped by a context centered on Asia and Africa as focal points for instability. Resource availability will therefore sit as a signpost to regional instability in the competitive energy market.[30] In this environment, the measure of security effectiveness will be highly influenced by perceptions of individual security.[31] Expeditionary foreign policies will appear less relevant in this congested world, yet overseas interests will sit as the direct interface to the immediacy of the threat.[32] As such, ad hoc coalitions will become the norm to enable legitimacy of purpose against a myriad of threat streams, each seeking to mitigate the strength of existing norms. Adversary

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Remaking of World Order (London: Simon & Schuster, 1996), 125. The difference with his original thesis is that globalization is creating tolerance in some areas through understanding of the difference of others, while enabling extreme cultural narratives.

[29]The Single Narrative of Al Qaeda, and affiliated violent extremism, is likely to dominate the next decade. While remaining central to extremism movements, Pakistan will see movement from this Asian nexus to North Africa in search of sanctuaries. Currently evidenced in Mali, Nigeria et al, sub-Saharan Africa is illustrative of the emergence of another front against extremism. The next decade is critical due to confluence of this migratory threat and the regeneration of military capability post-Afghanistan transition. The potential requirement for forward basing to prosecute these threats runs counter to the Western narrative designed to limit intervention. At best, a weakened rather than a defeated Al Qaeda is anticipated as the answer to this threat. This thereby erodes the strength of the Single Narrative, ideally dispersing affiliates back to localized groupings.

[30]US National Intelligence Council, *Global Trends 2025: A Transformed World* (US Government Printing Office, 2008), x.

[31]This does not erode the requirement for national security but in a competition for national identity, state strength will come from the individual. In this view of human security, the human will be given primacy over the traditional state-centric view. See Fen Hampson, *Madness in the Multitude: Human Security and World Disorder* (Oxford: Oxford University press, 2002), 15; Caroline Thomas, *Global Governance: Development and Human Security* (London: Pluto Press, 2000), 5; Alan Collins, *Contemporary Security Studies* (Oxford: Oxford University Press, 2007), 92.

[32]It is anticipated that the legacies from the early 21st Century in the Iraq War, Guantanamo Bay, and others will see a tightening of the legal framework for military conflict. Article 51 of the United Nations (UN) Charter, Chapter VII, while recognizing the right to self-defense will see a reinterpretation of its central tenets of imminence, consequence, necessity, and proportionality. The use of either a UN Charter or specific state consent will require global persistent presence in several priority countries. Acting unilaterally and illegally in breach of Article 2(4) against non-state actors will further undermine Western legitimacy, eroding the currency needed to prosecute and defeat threats at source. Pre-emptive military activity is therefore more likely a contingency approach, rather than a strategy writ large requiring extensive bi-lateral relationships, in the absence of a trans-national approach.

actions will therefore be aimed at undermining the ability to threaten and use forces.

The inability to anticipate these threats will shape the force structure needed and operations conducted. It will be necessary to conduct either preventative missions or pre-position reactive capabilities, requiring the ability to leverage the full spectrum of technology now. Increased global instability necessitates greater indicators and warnings and the potential for short-term interventions. Therefore against this global context, the real time fusion of effective intelligence at all levels is a necessity, rather than a 'nice to have.' In this view, effectiveness is determined by the efficacy of the analysis to enable functioning more akin to Boyd's OODA loop.[33] This paradigm of future war will be supported by a nodal real time system for information exchange between a complex network of human and electronic sensors. Without a shift, elements of current militaries could become obsolete, or artificially made redundant, as the boundaries of asymmetric advantage blur. The nature of the threat is that an enemy maximizes the technology at their disposal; the converse is that to defeat threats at source more agile mechanisms are needed to exploit technology.

Where does this leave us now? Conflicts will be defined by the ability to control the information domain. Precision engagement, while not a new concept, is likely to define the application of force, guaranteeing effect at operational and strategic levels. However, the political appetite for risk at all levels of military operations is reducing in Western powers.[34]

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[33]John Boyd's Observe-Orient-Decide-Act loop is but a small part of his theoretical approach to understanding the complexities of strategy, distilled into a simple and universally applicable mechanism. While Boyd's original presentations and essays have extensive value, the best discussion is made in Frans Osinga, *Science, Strategy and War – The Strategic Theory of John Boyd* (New York: Routledge, 2007), 2.

[34]Collateral damage is now becoming a key determinant in the successful prosecution of targets, recognizing its essential nature in informing and potentially creating counter-narratives to Western intervention. The net effect is that, in many cases, decision-making is becoming increasing centralized, with policy makers often making operational or tactical decisions. For example, in Operation DESERT STORM, the decision to strike targets inside Baghdad was moved to the highest levels after the fallout from a strike on one hundred civilians sheltering inside a bunker. See Wayne Thompson, "After Al Firdos: The Last Two Weeks of Bombing in Desert Storm," *Air Power History* (Summer 1996): 51-54; John G. Heidenrich, "The Gulf War: How Many Iraqis Died?" *Foreign Policy* (Spring 1993): 108-120. The power

Niche capabilities will continue across contingent operations, requiring politically aware commanders capable of often executing in the absence or emergence of policy. Against a medium term technology horizon, information technologies will sit as the dominant technological driver. This will deliver cultural and behavioral changes in human processes, with the human component sitting as the constraining factor for military technology. Agnostic of the social considerations, surveillance technology will feed the desire for information, in many areas mitigating adversary technological advantage. Yet, this changing environment, inclusive of the cyber domain, will see military operational currency developed in a reactive manner.

This has implications for the current domain definitions. Air is now capable of mitigating the risk of dedicated ground presence through persistent surveillance, enabled with the further weaponization of all platforms. Delivering precision with relatively quantifiable risk, this sits as a potentially easier policy choice.[35] Space sits as an extension of this environment, acting as a critical enabler for all military effects, especially in terms of surveillance, communications, and global positioning systems. Generating capacity will again act as the constraining factor in evolutionary technological shifts in these capabilities. Increased specialization in the current land domain will be needed to fully maximize synchronized capabilities in expeditionary roles. This

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of the counter-narrative was demonstrated highly effectively in Operation ENDURING FREEDOM. Taliban fighters repeatedly claimed thousands of civilian casualties, galvanizing support against the 'invader.'

[35]While the approach to Operation ALLIED FORCE in the Federal Republic of Yugoslavia illustrates the ability to conduct a campaign with air alone, many view this approach as fluke. Yet, a decade and a half later, this approach is increasingly becoming a reality, enabled by precision munitions and persistent platforms capable of denying adversary freedom of movement. For an excellent assessment of the air campaign, sitting as a bridge to the implications for future conflict see Benjamin Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica: RAND Corporation, 2001), 179-248. For an example of the criticism of air power in isolation, then Deputy Secretary of Defense Paul Wolfowitz in an interview with the New Yorker, actively slams any view that ground combat power is becoming irrelevant, with examples from Kosovo and Afghanistan. For a transcript of the interview see http://www.defense.gov/transcripts/transcript.aspx?transcriptid=3527 (accessed 1 February 2014).

may see a reduction in the role of heavy ground forces, as agile, quickly deployable, and rapidly maneuverable sit as the tenets to leverage capabilities in delivering lethality to the battlefield. Therefore, the overall logic of current domain classification will see even greater duplication of capabilities and the requirement to think multi-dimensionally in each, increasing the requirement for capabilities with a wider scope. This transference may in itself dictate a redefinition of war's current grammar.

A Question of Strategic Vulnerability

Exemplified in the strategic guidance generated in Western nations, this ability to decisively leverage technology for operational advantage defines the military thought of the US and its allies.[36] Characterized by an era of adapting to the asymmetric opponent, there is now an unprecedented fidelity in information across a large battle space, brought about through these technological advances.[37] The military paradigm now represents a congested space, forcing restructuring and reorganization to become more efficient and flexible to meet emerging threats.[38] This sits against a resource driven environment of reducing budgets while emerging from a decade embedded within conflict. Equally, Defense is no longer a 'last resort' national lever, asked to undertake a range of tasks, each placing it into a non-traditional space. Yet, certain

[36]For example, US Defense Strategic Guidance (DSG) includes the tenet that technological superiority will continue to be a critical enabler for superior U.S. war fighting capabilities. Each threat stream in this and other policies are determined to be magnified by the effect of technology with a view that the only way is to 'fight fire with fire.' Examples from past policy sees "our most vexing future adversary may be one who can use technology to make rapid improvements in its military capabilities that provide asymmetrical counters to US military strengths…" in CJCS, *Joint Vision 2010* (Washington, DC: US Government Printing Office, 1997), 10-11. Rapidly realizing that Joint Vision 2010 was a little overambitious, a new version emerged as *Joint Vision 2020*, with full spectrum dominance and technology the central tenet. See CJCS, *Joint Vision 2020* (Washington, DC: US Government Printing Office, 2000).

[37]For a good discussion on the developments through the 1990s and predictions for the future see William Owens, *Lifting the Fog of War* (London: Johns Hopkins University Press, 2000).

[38]This is closer to Thomas Hammes' view of fourth generation warfare. Technology has enabled significant changes to the landscape of conflict, yet the possession of greater technology does not immediately translate into military advantage. See Thomas Hammes, *The Sling and The Stone – On War in the 21st Century* (Minneapolis: Zenith Press, 2006), 190-206.

military technology now increasingly has a limited life cycle before replacement, now measured in around five years as opposed to decades, driving complexity into capability planning discussions.[39]

Why is this important? New technologies are operating across the board, from information technologies to anti-access and area-denial weapons. Attempting to keep pace in a fiscally constrained environment is likely to lead to strategic vulnerability. While reinforced by existing military theories, the evolution of military capabilities to mitigate US strength is likely to continue at pace. Global defense budget pressures will continue in the medium term, requiring greater competition for limited defense resources to meet a more congested and contested environment. Meanwhile, adversaries have the flexibility to effectively out-maneuver the bureaucratic procurement cycles that underpin Western national security.[40] While liberal institutionalism may promote the view that alliances and a global apparatus will ensure collective security, allies have made the assumption that the United States will always be there. This ranges from humanitarian relief in Asia to strategic power projection capabilities.[41] Rather than mitigating fiscally resource constraining decisions, this is likely to increase the requirement from the US 'security umbrella.' The United States is their safety net in a world of collective security.[42] These strategic choices are aligned to the US predilection with high-technology

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[39]Within the information and communication technology domain this is rate of change is even more pronounced. The effect is felt across all military hardware that contains embedded software, with software costs becoming more expensive that the hardware itself. Julian Satchell, "Emerging Trends," *ET Tips No. 83 (*Farnborough, UK: QinetiQ Ltd, 2009): 5.

[40]This does not attempt to suggest that adversaries can match the inherent strength of the big science/high technology military industrial complex of the US. However, through targeting identified vulnerabilities competitors are able to force procurement into a reactive cycle that precludes the advantage of staying ahead of trending threat streams.

[41]Across the board decisions are being made by traditional European Allies to dispense with capabilities for the whole spectrum of conflict viewing that the US will be able to deliver these at a time of crisis. See Unknown, "Defence Spending in a Time of Austerity," *The Economist* (26 Aug 2010).

[42]Demonstrated in Operation ALLIED FORCE in 1999, European powers acknowledged that without the US, the operation was a non-starter. In a world of increasing technology gap, this situation has

military solutions and that technological superiority guarantees military and strategic superiority.[43] Thus, it is the catalyst for victory. However, it distributes the deterrence dividend from collective security even further unequally onto the mantel of the United States.[44]

Unfortunately, this dystopian view of the world is closer to reality than many wish, with a realpolitik constraining effect. The previous theory that modernization had made the world safer, with technology shaping the environment of the past three centuries, is increasingly challenged.[45] The need for understanding during a time of relative peace, or emergence from a decade of conflict as now, necessitates a questioning of the assumptions of the current framework.[46] The questions to be asked dictate an understanding of whether this is a crisis of the scale of a paradigmatic shift.[47] From a cognitive perspective, much conjecture in the past decade focused

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increased, bounded now by the deliberate strategic choices assuming nothing will occur without the US. See Paul Gallis, *Kosovo: Lessons Learned from Operation Allied Force* (Washington, DC: Congressional Research Service, 1999), 5.

[43]For a discussion on the inherent 'technological utopianism' that informs US military strategic culture see Howard Segal, *Technological Utopianism in American Culture* (New York: Syracuse University Press, 2005), 42-54.

[44]While from a US perspective strength provides the ability to 'go it alone' this harks back to Winston Churchill's observation that "the only thing worse than fighting with allies is fighting without them." In Arthur Bryant, *Triumph in the West – 1943-1946* (London: Greenwood Press, 1986), 445.

[45]Since 1991, conflict has occurred on nearly every continent, with an unrelenting tempo to military operations; the UN has launched a peacekeeping operation every six months. Critically, in comparison to perceptions of safety the length of military intervention and these operations has now increased to five to ten years. See James Dobbins, " Guidelines for Nation Builders," *Strategic Studies Quarterly* (Fall 2010): 15.

[46]For a truly melancholy lament of the centrality of technology in the US approach to the world see James Kunstler, *Too Much Magic: Wishful Thinking, Technology, and the fate of the Nation* (New York: Grove Press, 2012). A thesis based on the ineffectiveness of technology as the panacea to global issues, this sits as the counter to all technophiles. However, while sensationalist in its ideas and fairly colloquial in its analysis, any near-term convergence towards this future is an overthrow of the existing Western narrative, creating a paradigmatic crisis for security constants.

[47]For a discussion on the role of meta-theory and the development of transformative ideas through which understanding is developed and thereby a theory of action see Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 2012). From a military perspective this scientific logic provides a useful mechanism for understanding the problems endemic to institutions when adapting to change. For explicit discussion on paradigmatic crises see 77-93.

on ensuring that Western militaries are organizationally flexible enough to deal with global technological advances. However, the ability to create mentally agile forces, capable of exploiting rapid technological advances to deliver strategic flexibility, is an issue of generational cultural change.[48] Lessons of the current generation will take this time to be culturally internalized in the institution.[49]

Yet, the paradigmatic theory of warfare that defines the United States and its allies is one based upon military superiority enabled through a predominance of superior technology. As such, it forms the meta-theoretical narrative that governs the choices inherent within the 'Western Way of War' towards the development and application of military power.[50] This strategic culture is the expression of US understanding of comparative advantage and responses to the security environment.[51] However, the net effect is that a strategy of technological superiority has superseded the theoretical underpinnings on the utility of force in the current context. Overall, this leads to the militarization of foreign policy through the utilization of a capabilities based

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[48]Gebicke and Magid have produced an excellent benchmarking analysis of worldwide Defense ministries to understand the trade off from productivity and performance. This becomes especially relevant in attempting to understand how to reduce the 'tooth to tail' ratio that is an inherent problem for high technology forces. See Scott Gebicke and Samuel Magid, "Lessons from around the world: Benchmarking performance in Defense," *McKinsey on Government*, no.5 (Spring 2010): 4-13.

[49]For a discussion on the difficulties associated with institutional reinforcing mechanisms acting prohibitively towards change see Deborah A. Stone, "Causal Stories and the Formation of Policy Agendas," *Political Science Quarterly* (Summer 1989): 288.

[50]This echoes the work of Victor Davis Hanson and his view of the Western Way of War as being unequalled in its devastation and its decisiveness. Concentration of mass to achieve this decisive effect is therefore paramount. Today, meeting this is achieved through the predominance of available technology to defeat threats. See Victor Davis Hanson, *Carnage and Culture: Landmark Battles in the Rise of Western Power* (New York: Doubleday, 2001), 440-455. Yet, this still sits more as a Way of Battle than of a comprehensive approach to the conduct of war, linking the essence of strategic policy to action.

[51]For a discussion of strategic culture as context and the manifested expression of comparative advantage, see Colin S. Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999), 144-146 or "Strategic Culture as Context: the First Generation of Theory Strikes Back," *Review of International Studies* 25, no. 1 (January 1999). Alastair Johnston provides the counter to Colin Gray's view of strategic culture with a methodology that separates culture and non-culture. His original thesis is in Alastair Iain Johnston, "Thinking about Strategic Culture," *International Security*, no.19 (1995): 36-43; while his direct counter is best emphasized in "Strategic Cultures Revisited: Reply to Colin Gray," *Review of International Studies* 25, no. 3 (July 1999).

approach rather than asking the hard questions about strategy.[52] However, this is not aimed as a strong left-wing stance that sees the military kept on the shelf for birthdays and summer fetes. It is recognition that the virtues of technological superiority form the central logic for the US and, by association, their allies. It is unfortunately now technological narcissism at its best.

This dyadic theory of military technology creates drivers for the continual modernization of the force.[53] In capability terms this is the race for the technological edge. Theoretically, the technologically superior actor is able to defeat another in either the offense or the defense. In some respects, this negates Robert Jervis' contention that war is more likely in the offense as the technological edge will ensure that advantage always rests with the technologically superior actor.[54] Security dilemmas are de-risked with a view that success remains with this approach.[55] It is therefore a rational approach for the United States with an extensive military-industrial complex, global economy, and a view of friendly force casualty risk aversion.[56] The validity of this theory has enabled US military dominance and hegemonic influence across the world,

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[52]Even some theoretical discussions on operational art refer back to the central tenet that until the advances of technology in the 19th century, operational art was not possible. See James Schneider, *Vulcan's Anvil* (Fort Leavenworth: USACGSC, 1992), 25.

[53]For discussion on determinants of capability, including dyadic theory see Stephen Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton: Princeton University Press, 2006), 14-27.

[54]Robert Jervis' argument that the rise of offensive capability fostered a greater chance of conflict qualified existing thoughts on the balance of military advantage. The changing nature of the security balance means that, especially with the likes of cyber and other emergent technologies, strength in the defense can create the strategic strength to initiate conflict. This is due to the fact that defensive vulnerability to types of information warfare can completely negate strategic strengths due a state's interconnected nature. See Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30, no.2 (January 1978): 167-214. In a similar vein to Jervis see Stephen van Evera, "The cult of the offensive and the origins of the First World War," *International Security* 9, no.1 (Summer 1994): 58-107.

[55]This view of superior technology as the risk mitigation was voiced from the Cold War era in Robert McNamara to Donald Rumsfeld in more modern times. For discussion on Rumsfeld's view on reducing the fog war see Benjamin Buley, *The New American Way of War: Military Culture and the Political Utility of Force* (Oxford, UK: Routledge, 2008), 85-88, 107-110.

[56]From a casualty aversion standpoint this applies equally to enemy combatants with Western policy makers placing a limiter on military force. See Walter J. Boyne, *Beyond the Wild Blue: A History of the U.S. Air Force 1947-1997* (Maxwell AFB: Air University Press, 1997), 7.

however it is a theory of infinites. The more advanced the technology, the more complex and cost-prohibitive US capability strategies become; yet retaining technological superiority necessitates continued investment.

In this situation, plan B ends up looking like a lot more of plan A, determined against a narrow vision of the future. Generally, US defense budgets reflect historic strategic choices in this regard and often end up as self-referential supporting this strategy. More frequently, policy and strategy become subservient to this logic, with military strategy determined through modernistic objectivism. This lacks the analytical reasoning necessary to interpret the potential for change, which may see the likelihood of Van Creveld's vision of the military technological machine grinding to a halt.[57] This is enabled by the greater accessibility of traditionally perceived 'big science' and the diffusion of technology through a contagion effect in the current interconnected world. Overall, this undermines the constant by which strategies of technological superiority are successful through controlling access to military technology. Even where technology is assumed to sit within the controlled environment of existing alliances, recent reporting on the sale of US technology from Israel to China demonstrates the inconsistency of this premise.[58]

This confluence of imperatives provides a rationale to reconsider alternatives to current technological approaches to warfare. While examination of the future environment is a current en vogue topic for military discussion, a thorough examination of the underlying precepts is necessary. Three new domains have fully entered the theoretical frame of war in only the past

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[57]Martin Van Creveld, *The Transformation of War* (New York: The Free Press, 1991), 210-11.

[58]For illustrative reporting on China see Bryant Jordan, "Report: Israel Passes U.S. Military Technology to China," *Defense Tech*, 24 December 2013, (accessed 8 February 2014); Equally, India, Russia, and Georgia acquired technology from Israel, see Government Accountability Office, *Non-Proliferation: Agencies could Improve Information Sharing and End-Use monitoring on Unmanned Aerial Vehicle Exports* (Washington, DC: US Government Accountability Office, July 2012), 11; Illustrating that this is not an isolated phenomenon see Colin Urquhart, "US acts over Israeli arms sales to China," *The Guardian* (12 June 2005): 5.

century and while technology has always driven warfare, has the situation changed?[59] Capability development is not strategy in its own right and internal navel gazing does not accurately reflect the security environment. Ignorance to current and future changes may leave the trajectory of a strategy of technological superiority tangential to the threat. Technology is always expected to have a currency in warfare. However, is it depreciating? The only way to get at this is to attempt a dialectic reasoning of the past, current, and the future to understand and harness the complexity of technological superiority.

> Every age has its own kind of war, its own limiting conditions, and its own peculiar preconceptions.[60]
>
> —Carl von Clausewitz, *On War*

[59]Air, Space and Cyber.

[60]Carl von Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 2009), 593.

WHY IS THIS IMPORTANT? – COMPARATIVE ADVANTAGE IS RELATIVE

> The advent of modern technology has in no way lessoned the strategist's need to adapt his military plan to social and political realities. The second half of the twentieth century has seen a series of startling defeats handed to great powers by warriors whose strategic insight made up for their inferior weapons. Algeria, Vietnam, and Afghanistan are cases in point. Evidently, technology has not replaced strategy as the determining factor of military success.[61]
>
> —Barry Strauss and Josiah Ober, *Anatomy of Error*

Critique, Critical, or Simply Irrelevant Discourse…?

It is easy to dismiss any critique of a strategy of technological superiority as simplistic, lacking context, and misrepresenting the utility of force.[62] The technophile naysayers to a problem will proffer solutions that reinforce the continued maintenance of the initiative, recognizant of Isserson's consecutive operations to support technology driven approaches.[63] Operations are thereby designed to destroy the cohesion of a force through destabilizing an enemy's initiative by continual pressure, whether targeting the Clausewitzian center of gravity directly or indirectly.[64] Here, technology compensates for the Western perception of inferior numbers, creating the conditions for success prior to conflict. Little risk is seen due to a lack of a near-peer competitor to the United States or quantifiable threat to US and Western primacy. Equally, policy makers can spin the perception of strength and strategic success, therefore

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[61]Barry Strauss and Josiah Ober, *The Anatomy of Error* (New York: St Martins Press, 1992), 9-10.

[62]This is expected. The rationality of choice versus intuition as a decision framework presents a difficulty when attempting to break poor inductive reasoning. So much of military action is dependent on various heuristics and deductive logic enabling the collective whole. The challenging of these operating assumptions is likely to potentially paralyze what is conventionally deemed as functional. Even individual recognition of the fallibility of inductive military logic will struggle against institutional bias; the ingrained nature of this bias sees others often not able to articulate the reasons behind why they think a particular way.

[63]Richard Harrison. *Architect of Soviet Victory in World War II: The Life and Theories of G.S.Isserson* (Jefferson, NC: McFarland & Company, Inc., 2010), 108-110.

[64]It is recognized that this currently sits front and center of the US Army's approach to change for the future. This is representative of many Western militaries attempting to rethink approaches to warfare emerging from the past decade but this still does not return to first principles for the development of a coherent force. See Army Doctrine Publication (ADP) 3-0. *Unified Land Operations* (Washington, DC: Government printing office, 2011), i.

continued adherence might not spell defeat against emerging threats. History has likewise demonstrated the effectiveness of executing a 'technological war' against the Soviet Union, enabling success without conflict, reconfirming this as strategic culture.

Yet, this still sits within a view that strategic horizons are being determined by technological choices, with operational effectiveness the defining characteristic not strategic positioning. Military comparative advantage using the logic of operational effectiveness means that a force only has to be perceived as performing better than its rival, relating back to a dyadic theoretical base.[65] Strategic choices based on the compensatory technology for perceived inferior numbers skews this further, ignoring the consequences of changes. This enables the abilities of rivals to undertake margin-eroding measures to seek to negate the advantages afforded by unique technologies. This can avoid the barriers to entry erected by dominant countries against the diffusion of high-technology warfare. Ultimately, focusing primarily on operational effectiveness leads to strategic misalignment, either against internal policy objectives or misunderstanding the environmental frame of reference. The incorrect strategic assumption that Western dominance can only decline through the rise of a competitor ignores the erosion of Western hegemonic influence by non-traditional actors.

Even when recognizing the need for change, explicit focus on either the near or the far term can equally ignore the reality of causal change. Much conjecture is made of the future challenges of multi-polarity, deluding decision makers on the inherent near to medium term issues. The greatest threat to the security environment exists during a period of transition. The interconnectedness of a truly globalized world means one cannot assume away threats or the second or third effects of one's own action as sitting in the 'all too difficult category.' Future structures shaped only for multi-polarity ignore the potential to fight for survival to get there.

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[65]See Stephen Biddle, *Military Power*, 16-17.

This forms the essence of why a coherent strategy encompassing multiple time horizons is needed. In the near term, while entering Afghanistan and Iraq with an expeditionary mindset, the micro-level technological development demonstrates the blurring of the boundaries of asymmetric advantage.[66] While tactically successful, these developments have created strategic impotence. Rapid iterative technological development, reacting to immediate changes has shaped Western militaries for a single paradigm of warfare. The 'magpie effect' of these conflicts in face of complexity transitioned the traditional procurement industry to a reactive manner, avoiding testing and evolving for the future. Returning to an expeditionary capability is necessary for the future, but this requires a more agile approach to technology.

Therefore, the current environment sees the emergence of a possibility space for Western militaries, with the potential of moving the military paradigm to where it has never been before. In an era where traditional strategic planning becomes obsolete or inherently difficult, Henry Mintzberg's view that scenario planning is the essence of future planning comes to the fore as a means to inform strategic thought.[67] A systemic rather than purely dyadic view, it is a discursive approach that recognizes that it is necessary to be focused less on predicting outcomes and more on understanding the forces that will compel an outcome.[68] This cannot be achieved through internalization alone; it is necessary to consider the 'other' in the security environment. If it is

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[66]See Joseph S. Nye, *The Future of Power* (New York: Public Affairs, 2011), 36, for discussion of the blurring of asymmetry in the contemporary context of military power. Equally, in an early critique of the dominant RMA discussion Sullivan argues for asymmetry in negating the advantages of technology as "well applied human ingenuity can remains more powerful than any technology." See Brian Sullivan, "The Future Nature of Conflict: A Critique of the American Revolution in Military Affairs in the Era of Jointery," *Defense Analysis* 14, no.2 (1998): 91-99.

[67]While traditionally focused on the business space, Mintzberg analyzes the rationalization inherent in the US military and a pretension to universal solutions to problems. The most applicable of his books for military thought is Henry Mintzberg, *The Rise and Fall of Strategic Planning* (New York: Free Press, 1994). Consistent with this, scenario building techniques used as part of the grounded qualitative analysis to develop this monograph follow the methodology laid out in Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World*, Reprint ed. (New York: Currency Doubleday, 1996), 9.

[68]Ibid, 248.

necessary to change a technological deterministic view this then raises a security dilemma, in that one must think to act and act to think.[69] In the era of fast paced decisions with little time, coupled with the need for rapid results, the question for change is one of how to create time for decision making without trading space for time in the conceptual and technological spaces. Learning through the mistakes of human cost is a difficult construct in liberal democracy. Unconstrained thinking will prove essential to leverage existing capabilities in imaginative and innovative ways.

The Interface of Strategy and Positive Self-Deception

These technology and capability dilemmas create a conundrum for the Western strategy of technological superiority. The optimization of capabilities to meet the full spectrum of threats, both defensive and offensively, represents the panacea sought by global powers. Yet, despite increased global instability, defense budgets continue to reduce in proportional terms, particularly evidenced in the technology generating countries.[70] The current technological advantages may level out, or more likely become cost prohibitive, as additional domains become viable avenues for adversaries. Relative affordability enables the spread of new and previously defined high technologies, narrowing the military advantage gap between the traditional nation-state and non-state actor. This applies equally to the asymmetric advantage afforded to the United States against other states. Currently, the US position on the global stage is undeniable and unmatched. As a strategic power broker it is able to manipulate global decision-making to support its own agenda and that of its allies. Global change is executed through multi-lateralism with regional partners, extending the influence of US hegemonic power.[71]

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[69]Ibid, 293.

[70]Scott Gebicke and Samuel Magid, "Lessons from around the world: Benchmarking performance in Defense," *McKinsey on Government*, no.5 (Spring 2010): 4-13.

[71]The role of technology in enabling this hegemonic growth should not be understated, as it is central to the 'attractive' soft power of the United States. For an excellent comparative example of role of technology in the expansion of European empires see Daniel Headrick, "The Tools of Imperialism:

However, a multitude of factors are affecting this span of influence and the nature of the security environment, from an emergent China to the economic downturn.[72] Recent attempts to introduce Western liberalist ideals to the Middle East and Asia have been unsuccessful, with the unintended consequence of unifying elements against the US.[73] While both lauded and criticized, the position of the United States in the self-appointed role of 'global policeman' is contingent on this strategic influence. A decrease in this hegemonic power base erodes the fabric of security that is provided to the US and its allies. In response to this, Richard Haass portrays a contrarian view of the emergence of non-polarity as the new norm, defining a changing role to the traditional assumptions of power and influence.[74] This view sees a decline in the ability to influence world affairs by the major powers, due to an increase in the number of actors, state and non-state, with meaningful power. Overstretch by the United States would itself lead to a decline symptomatic of the imperial overstretch by colonial powers a century earlier. This raises the question over whether the military's role to reinforce hard power will be sufficient in this globalized world with an even more diffuse threat spectrum. Importantly, there is a real possibility for traditional Western states that by attempting to defend everything, the effect is the defense of nothing.

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Technology and the Expansion of European Colonial Empires in the Nineteenth Century," *Journal of Modern History* 51, no.2 (1979): 231-63.

[72]The overextension of US military forces in Afghanistan and Iraq has led to an emergent China, whose foreign policy is one akin to that of imperial Japan of the 1930. China's strategy is focused towards developing economic abilities to extract natural resources, undertaking military intervention in areas of interest, and the annexing of regional powers through the installation of puppet leaders, for example in Burma and North Korea. As such, the China of today could be compared to Germany in the latter 19th century, illustrating the view that peer growth often leads to regional instability.

[73]Francis Fukuyama, *After the Neocons* (London: Profile Books, 2006), 187.

[74]Richard Haass, "The Age of Nonpolarity – What will follow U.S. dominance", *Foreign Affairs* (May/June 2008).

There is a real danger for Western states in that rigid adherence of current approaches may lead to cumulative failure against these more agile opponents, or an unpalatable cost to its human component of fighting power.[75] The security dilemma for these states is based on a constructed reality of the future for defense planning from which to derive the capabilities to invest in. It is here that the problem may lie. A strategy of technological superiority concedes advantage only where investment is made in an appropriate or adaptable technology to meet the threat, if that threat remains the driving factor. As is evidenced in the case of Israel, outlined below, the changing nature of the threat can undermine planning constants for technological superiority. When attempting to achieve strategic superiority through defense planning, hope is not the option for translating this into effect.

Against this, Clausewitzian logic portends that the transformation of war comes from the transformation of politics, consistent with Haass and Joseph Nye's view on this diffusion of power.[76] This Clausewitzian logic runs counter to the view of technology as the central characteristic for change, seeing developments in technology as a direct corollary of society in general.[77] This is closer to environmental determinism, consistent with military revolutions acting as the driving force for the change, contrary to the 1990's logic of RMAs.[78] For

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[75]Hew Strachan provides an excellent comparative example to today of the resistance to 'potential' revolutionary change in Hew Strachan, "The Battle of the Somme and British Strategy," *Journal of Strategic Studies* 21 (1998): 79-95. In this case the British Way of War was impervious to recognizing the need to change in the face of the inherent problems of World War I.

[76]Joseph S. Nye, *The Future of Power*, 29-31.

[77]Carl von Clausewitz, *On War*, 515. The enduring nature of Clausewitzian logic is enabled by his separation of technology from human nature and war itself.

[78]Military Revolution – Knox and Murray's definition is the most applicable to this assertion in that a military revolution is an uncontrollable, unpredictable and unforeseeable event which fundamentally changes the framework of war through seismic changes within societies as well as the military organization. A deduction can be made that a military will not know that they are in the midst of military revolution but that it will likely find itself wrestling for answers to the problem of consistency in theories of war and warfare. MacGregor Knox and Williamson Murray, *The Dynamics of Military Revolution 1300-2050* (New York: Cambridge University Press, 2009), 13.

Clausewitz this enabled the retention of a broad theory of war upon which to build, recognizing that analytical certitude is impossible and therefore that there is never a fully justified solution to every problem.[79] Through developing theories against the current environment both enhances and refines this conceptual approach to warfare, cognizant of a continually changing landscape. Holistically, this must encompass oneself, the environment, and the perspective of the 'other.'

Symmetric Mirror Imaging - Navel Gazing for the Other

> All the people like us are We,
> And everyone else is They.[80]
>
> —Rudyard Kipling, *A Friend of the Family*

Regularly, Western militaries apply an ethnocentric approach when undertaking or considering intervention strategies within other cultures.[81] Evidenced as far back as the Peloponnesian War, in built ethnocentricity and stereotyping enable extremes of superiority leading to conflict or the domination of civilizations based on one's own position. A lack of dissenting opinion to a polarized perspective of military strategy can easily lead to ignorance and the reinforcing effect of existing individual or organizational biases as groupthink.[82] Acceptance of the necessity for discourse is critical to overriding these biases. Where certain elements of defense take an interpretative stance to viewing the security paradigm of others, it remains easy to

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[79]Carl von Clausewitz, *On War*, 156-169.

[80]In Rudyard Kipling, *Debits and Credits* (London: Doubleday Page, 1926), Ch. 27.

[81]For an outstanding discussion on the effect of this lack of understanding in Afghanistan see Mike Martin, *An Intimate War – An Oral History of the Helmand Conflict* (London: Hurst & Co, 2014), 233-249. Equally, for discussion on the folly of overrating oneself and underrating the foe see Boyd Tonkin, "Afghanistan and other victory myths enlisted by the Army," *Independent Newspaper* (11 April 2014): 7.

[82]For example, regularly western militaries impose themselves a perspective bias of viewing all deployed economies and culture as being based on capitalism and the free market. Without exception, this fails to understand the formal and informal markets that exist and who the true 'power players' are. Avoidance of this is not necessarily simply a mechanism of greater time based analysis; it is necessary to gain an understanding of the sub-culture that exists relative to the economic and perceived social framework. The human behavior exhibited may run counter to the very fabric of western existence, such as bribery and corruption. Yet, these mechanisms are a way of life that enables overall equilibria. Any attempt to impose something different will create a direct friction point for conflict.

extrapolate phenomena exhibited at the micro level to make incorrect assumptions of the strategic culture across the macro. When taking an externally functional assessment to access the strategic culture of another, it is equally easy to mirror image one's own view of military power, and thereby still act ethnocentrically. From a military perspective, this emerges as the 'checklist mentality' to cultural analysis. Yet, there is no easy approach to something in which the Heisenberg uncertainty principle reigns supreme. The manifestation of these problems is evident in current rhetoric on the rationality of international actors.

From a Western perspective, the West is rational and all those not agreeing with these intrinsic ideas are deemed acting irrationally.[83] In reality, this is the collision of two different views both built from bounded rational constructs, however the reinforcing effect of an ethnocentric narrative undermines effectiveness. This demonstrates a high potential for cognitive dissonance in developing a security strategy to deal with the perceived 'other.'[84] Importantly, often the other thinks more in ontological terms. Both *Unrestricted Warfare* and *Canons of Jihad* outline mechanisms by which to limit US military strengths, in many respects utilizing thinking outside of the conventional frame.[85] In both of these books, a defining characteristic is that the

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[83]The balance of Eastern versus Western thought is fairly well articulated in the The Geography of Thought. It manages in its attempt to provide the layman with a mechanism to understand the differences between cultures based on individual versus collective action. Class imposed western thinking as the initial perspective for eastern interpretation still finds us collectively ill-equipped to understand a culture less concerned with absolutes. See Richard E. Nisbett, *The Geography of Thought* (New York: Free Press, 2003), 47-79.

[84]Given that we are a product of previous actions, the rhetoric from the late 1990s is symbolic of ethnocentric attitudes to the other. For example see George and Meredith Friedman, *The Future of War: Power, Technology and American World Dominance in the Twenty-First Century* (New York: St. Martin's Griffin, 1998). In equal measure, then Secretary of State Madeleine Albright famously stated about Iraq in 1998, "if we have to use force, it is because we are America. We are the indispensable nation. We stand tall. We see further into the future." Reported by Bob Herbert, "War Games," *New York Times* (23 February 1998): E17.

[85]Unrestricted Warfare provides a military strategy to counter the technological might of the West. While written in 1999, in many areas the foundational theory is now seen in the emergent Chinese military force; in essence it represents a different mode of thinking. It should not be seen as a revolutionary approach but an amalgam of the best theories from history, balanced against the Chinese military and cultural paradigm. See Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Panama: Pan American

weaker side fundamentally does not have to abide by the regulations formulated by the superior side.[86] In broad terms, these approaches sit closer to the Clausewitzian model of total war, with severe implications for an opponent thinking only in terms of limited war.[87] Overall, these approaches are built against a longitudinal view of grand strategy that is willing to trade today's perceived advantages for enhanced strengths in the future.

Western concepts of the relative nature of power are equally challenged by the Quranic concept of power, seeing power as immutable and resolute.[88] Through mirror imaging oneself on the view of the other, one misunderstands what truly confers military advantage in this situation. Alternative views on the merging of domains, as an effect of technology diffusion, means that warfare is no longer bounded by Western logic.[89] This confluence of existing worldviews means that there is no quick fix to understanding the competing human components of warfare. Yet, ignorance of these is likely to yield an impassible escalation towards conflict. Examples exist throughout history of the net effect of continually reinforcing worldviews such as the Cold War,

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Publishers, 2002), 177-186. None of this is new and JFC Fuller's original view was to develop capabilities that targeted enemy resistance, defeating their will for fighting. See Brian Bond and Martin Alexander's essay in Peter Paret (ed). *Makers of Modern Strategy – from Machiavelli to the Nuclear Age* (Princeton: Princeton University Press, 1986), 598-623.

[86]This view of warfare is equally evident in the Russian approach to information warfare. See Lester Gray and Timothy Thomas, "A Russian View of Future War: Theory and Direction," *Journal of Slavic Military Studies* IX, no.3 (Sept 1996): 501-518.

[87]For example, Unrestricted Warfare's twenty-four methods are sub-categorized as military, above military, and non-military, seeking to concurrently leverage all elements together to paralyze the enemy nation. This is achieved through effective targeting of command and control systems with certain information, and the destabilizing of all mechanisms of deterrence. See Qiao Liang and Wang Xiangsui, *Unrestricted Warfare*, 123.

[88]S. K. Malik, *The Quranic Concept of Power* (Lahore: Progressive Publishers, 1979), 277-294. Also see David Kibble, 'The Attacks of 9/11: Evidence of a Clash of Religions?' *Parameters* 32, no.3 (2002): 36.

[89]In many respects discussion of emerging domains of warfare in the West has reached near-theological proportions. This sits counter to the requirement for a true evaluation on how to develop a strategy. The 'other' sees warfare as being part of a continuum, agnostic of domain or environment classifications.

or the Israeli position towards other Arab nations. Despite moderation and reconciliation attempts, shared worldviews undermine these, as it is difficult to break away from reinforced messages. The centrality of this confluence has a direct effect in shaping the strategic culture to support a strategy of technological superiority. It is this that shapes environmental frames of warfare that overlap to create competitive rivalry. Ignoring it cedes advantage before setting foot on the battlefield.

To attain 'victory' in the future security environment requires overcoming this inherent tendency towards ethnocentrism and strategic mirror imaging. Without change Western militaries will collectively fail to think in any degree above the operational level of war, ignoring the strategic context of other states. The centrality of the philosophy of decisive success almost assumes away the view of the other in conflict.[90] As operational concepts, these cede advantage in the realm of strategic imperative, creating the conditions for long-term intervention, akin to the recent decade, by assuming that there will be no reason for resistance. In this, strategic surprise must not become the norm for every operation or we are failing to link policy to action, transferring blame like a small child in the playground.

The illustrative logic of these competing imperatives to strategic choices for military capabilities is outlined in three short examples. The importance of each is that they evidence the case in point of short-lived relative advantage, whether dictated by internal policy, threat, or an inability to translate the technology into truly effective capability. Equally, philosophies of strategic mirror imaging or ignoring trends compounds this inability. Critically, decisions based on an incomplete or ignorant understanding of the environmental frame of war will have long-term implications that may be irrecoverable. Processes to maximize the effect of technology are

[90]There is no single 'magic bullet' to achieving success, yet our approach to strategic mirror imaging assumes away this risk. Frederick W. Kagan, "High-Tech: The Future Face of War? A Debate" *Commentary* CV, no.1 (Jan 1998): 31-32.

likely to reinforce the overriding of military strategy by operational effectiveness. Importantly, in some cases, it is still possible to achieve success through rapid adaptation by reframing the problem space.[91]

This is the justification for their inclusion. At face value, they may appear overly critical of technological determinism. This is not the intent. However, the effectiveness of the represented strategic choices in the near-term illustrates the difficulty in developing a coherent strategy for every situation. Firstly, the macro environment of strategic choice in the early Cold War outlines the importance of ensuring that military intervention is broadly matched to previous choices on effectiveness. Secondly, as a microclimate, the Israeli position and choices to align with high technology options and a singular view of warfare recognize how enemies can generate strategic surprise through targeting vulnerabilities. Equally, Hezbollah's hybrid approach in 2006 challenged Israeli assumptions of a constant threat space, overriding their logic of military decision-making. Finally, as an ode to the future, the Russia-Georgian conflict demonstrates the effectiveness of aligning all capabilities in a manner that provides a continuum of strength appropriate to one's ability. This challenges traditional symmetric constants of planning and may prove representative of the challenge to Western planners in the future.

Shiny Object Decisions - Superman Is not available to bail you out

The end of World War II redefined the geo-political landscape with the demonstration of a weapon of the magnitude to ensure decisive victory, questioning traditional understanding of the Clausewitzian trinity.[92] This technological edge gave rise to an American view of deterrence

[91]Donald Schoen discusses the need for both 'reflecting in action' to enable reframing through Design and 'reflecting on action' as the mechanism for improving long-term reasoning. See Donald A. Schoen, *Educating the Reflective Practitioner* (San Francisco: Jossey-Bass, 1987), 44-79.

[92]Carl von Clausewitz, *On War*, 88-89. Clausewitz's trinity underpins the view of why war does not necessarily escalate to his defined absolutes and, in real terms, total war. Acting a braking effect towards this trend, the reality is one of limited war. However, the introduction of nuclear weapons

and the use of nuclear capability in a conventional manner. George Kennan's original asymmetric strategy saw confronting the political-military-ideological base of the Soviet Union at a place of one's choosing. In light of the Soviet Union's successful nuclear test in 1949, this evolved into the strategy of symmetric containment in NSC-68.[93] So what? The introduction of the new technology in the nuclear bomb created a paradigm viewing traditional warfare as obsolete. Deterrence became the focus and the base assumption was that ownership of nuclear technology made one immune from attack. Military forces were therefore designed to prevent war and not necessarily wage it, with finance spent accordingly. European concern rested on the use of the nuclear deterrent as a means of containment during a period of German rearmament to act as a buffer to Soviet expansion. If conflict occurred, the assumption was that thermonuclear weapons would be used under military control to ensure tactical advantage. Land warfare was obsolete.[94]

The Korean War challenged all of these assumptions. An ineffective deterrent against Chinese forces, plus Korea's role as a limited war to prevent Soviet expansion, gave rise to a differing view of nuclear use. As a result, nuclear deterrence was ineffective without troop presence and even though doctrine advocated nuclear use by military commanders, President Truman refused to use them. This challenged military primacy in war and led to a redefinition of

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potentially undermined the effect of chance, reason, and violence allowing immediate escalation to annihilation with a single capability.

[93]The Executive Secretary, *A Report to the National Security Council – NSC 86,* 7 April 1950. For discussion on Soviet Conduct prior to the successful nuclear test see George F. Kennan, "The Sources of Soviet Conduct" by X, *Foreign Affairs 25* (July 1947): 566-82.

[94]For further explanation see Michael Carver's essay in Peter Paret (ed*). Makers of Modern Strategy – from Machiavelli to the Nuclear Age* (Princeton: Princeton University Press, 1986), 779-789. Spencer Tucker's excellent discussion illustrates the problems inherent to this environment. Spencer Tucker, "The Korean War: 1950-53: from maneuver to stalemate," *The Korean Journal of Defense Analysts*22, no.4 (December 2010): 421-433. For wider reading see Clay Brian, *The Forgotten War: America in Korea, 1950-53* (New York: Times Books, 1987).

the US civil-military interface.[95] Yet, overall the Korean War critically undermined the view of the US as the most capable force in the world. Massive troop reductions and equipment shortfalls left the US military incapable of operating in a theater that it had only recently defeated the Japanese in. Ultimately, this reintroduced the concept of limited war. Rather than nuclear countries confronting each other directly it was easier to fight a series of limited proxy wars. Alliances for collective defense consolidated the view that nuclear weapons were strategic levers, leading to a clear review of the expectation for conventional forces.

In the period after Korea, President Eisenhower's 'New Look' led to a nuclear arms race based on massive retaliation. This was built on a simple cost benefit analysis that it was cheaper to invest in nuclear technology than conventional force structure.[96] As a result, the United States Army found itself adrift trying to find a role in nuclear warfare.[97] Unsurprisingly, a further embodiment of a technological driven strategy saw development focused on the tactical employment of nuclear capabilities.[98] While this could have been effective, there was little to no emphasis on counter-insurgency, despite the evidence of French and British operations across a

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[95]The policy of containment and the need for a deft touch in the use of military force saw greater reliance on political strategy to determine operations. Policy disconnects and the subsequent removal of General Douglas MacArthur by President Truman reaffirmed this civilian control of the military.

[96]This 'New Look' period from 1952 to 1962 saw nuclear strategy examine the concepts of brinkmanship, second-strike capability and the real possibility of mutual assured destruction. It was only the Cuban Missile Crisis and the change of focus by President Kennedy's administration that prevent this escalating further. This saw the shift to a flexible response option and a return to symmetric containment. For an excellent analysis of US national security policy during the early Cold War see John Lewis Gaddis, *Strategies of Containment* (Oxford: Oxford University Press, 2005), 87-197.

[97]The Eisenhower administration deployed nuclear weapons to South Korea in 1958 as an economical alternative to increasing the already significant troop presence. As a strategy this enabled a significant reduction in post-Korean War stability troops but further shifted the balance of effort in favor of nuclear deterrence. Overall, defense budgets fell by a quarter under President Eisenhower after the Korean War. However, despite this budgets each of the services sought to develop their own unique nuclear capabilities. See Thomas G. Mahnken, *Technology and the American Way of War* (New York, Columbia University Press, 2010), 27-50.

[98]For a short discussion on strategic choice and building the wrong army, embodied in the Pentomic Division see David F. Melcher and John C. Seimer, "How to Build the Wrong Army," *Military Review* 9 (September 1992): 66-76.

broad strategic scope.[99] The long-term ramifications of these cost-benefit decisions led to a US Army ill prepared to fight in the environment of Vietnam. Technological determinism for the lure of nuclear weapons, coupled with the potential for a conventional fight in Europe, left it re-developing as a force under fire in the jungle.

The reflective nature of history makes it easy to lambast the Vietnam War with the benefit of hindsight. Yet, this precludes the assumption of context as the determining factor for strategic decision-making. The likelihood is that decisions would be no different by anyone else stepping into the shoes of Presidents Kennedy, Johnson, and Nixon at the height of the Cold War. This is especially relevant when considering that Presidents Kennedy and Johnson inherited policies of containment for Vietnam from Truman and Eisenhower. The real area of criticism is how to tackle the emerging problem space in a manner that re-affords advantage. Sheer firepower and numbers was the solution developed to an enemy that would not be defeated.[100] In military terms, the relevance of Clausewitz's understanding of the inter-relationship between chance, reason, and emotion enables the ability to develop a campaign strategy, the absence of which will lead to strategic failure.[101] Conversely, the US approach to problem solving in the Vietnam War relied increasingly on technologically driven solutions.[102]

Overall, the Vietnam War was focused on Jominstic principles but lacked the Clausewitzian understanding of this inter-relationship to strategy. As such, it can be regarded as

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[99]While it is easy to label criticism at the lack of recognition by US forces of the need to counter a differing threat, the lack of a real empire by the US means that any development was focused on war fighting rather than alternatives. Equally, hindsight does allow glib generalizations applied across a massive military, ignoring the efforts made under President Kennedy to develop the US Special Forces during the early years of Vietnam.

[100]For example, General Westmoreland, "…massed firepower was in itself sufficient to force a besieging enemy to desist…" See William C. Westmoreland, *A Soldier Reports* (Garden City, NY: Doubleday, 1976), 204, 412; Moyers Shore, The Battle for Khe Sanh (Washington, DC: Headquarters U.S. Marine Corps, 1969), 110-111.

[101]Carl von Clausewitz, *On War*, 89.

[102]Thomas G. Mahnken, *Technology and the American Way of War*, 65-72.

a series of tactical success, but an overall military failure due to a misalignment between the political, military, and people dimensions of the strategic environment.[103] This is even more relevant today, whereby the lack of coherence between military, political, and public views can undermine strategy. Worryingly, for military commanders, this has potentially shifted the center of gravity of a conflict away from the military force to the intangible, making it more critical to examine conflict using Clausewitzian logic.

Ignoring this Clausewitzian mandate, three important lessons were learned and then artificially lost in the post-Vietnam era. The first is that military power is not an abstract entity that can be bent to the will of policy makers to guarantee victory, especially relevant in the over emphasis on air power.[104] Second, when fighting an insurgency, intangible resilient strength cannot be eroded by sheer firepower alone.[105] Throughout the Vietnam conflict, US policy makers ignored the overriding strategic and political goals for Vietnamese independence. These were virtually un-erodible and rooted in centuries of history. Finally, and most importantly, the lessons of war from those undertaking an asymmetric strategy demonstrated that a string of tactical defeats could be woven into overall victory. The overall asymmetric strength of the US superpower contained, in itself, vulnerabilities that manifested in an expanded conflict. In some respects this was down to the fact that operational planning focused on tasks could be completed with all the US capabilities, without asking why they should be.

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[103]Thomas Hammes, *The Sling and The Stone*, 228; Thomas G. Mahnken, *Technology and the American Way of War*, 118; Frank G. Hoffman, *Decisive Force: The New American Way of War* (Westport, Praeger Publishing, 1996), xi.

[104]See Donald J. Mrozek, *Air Power and the Ground War in Vietnam* (Maxwell AFB: Air University Press, 1998), 1-20; Andrew Krepinevich, *The Army and Vietnam* (Baltimore: John Hopkins University Press, 1986), 15.

[105]Bernard Fall, *The Two Viet-Nams: A Political and Military Analysis* (New York: Praeger, 1967), 200-240; James Harrison, *The Endless War: Fifty Years of Struggle in Vietnam* (New York: Free Press, 1982), 78-92; also see the complete book of William Darryl Henderson, *Why the Viet Cong Fought* (Westport: Greenwood Press, 1979).

Why is this even relevant? Critically, this period shaped the US Way of War, developing into the underlying approach that exists today. Rather than rethink approaches to technology after Vietnam, the US military continued to emphasize it, coupled with McNamaraesque mathematical rules for probability of success.[106] Rejecting Clausewitzian maxims, the US approach to war to annihilate its opponents is more a way of battle than war; hence, it is hardly surprising to see the confluence of operational effectiveness in Vietnam.[107] Equal to this pre-eminent position of annihilation is the view of strategic materialism, in defeating threats through the use of material superiority.[108] Together, these achieve the rapid decisive effects that embody the US approach to war fighting.[109] It is this that gave rise to the Revolution in Military Affairs agenda of the 1990s with a view of 'distance warfare.'[110] However, this serves a predilection for technology over technique.[111] Winning the first fight becomes the driving imperative.[112] Not that

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[106]Brian Linn, *The Echo of Battle – The Army's Way of War* (Cambridge: Harvard University Press, 2007), 204-207.

[107]Antulio Echevarria, *Towards an American Way of War* (Carlisle, PA: Strategic Studies Institute, 2004), vi.

[108]Benjamin Buley, The New American Way of War: Military Culture and the Political Utility of Force (Oxford, UK: Routledge, 2008), 49-50.

[109]This is fundamentally not a new phenomenon and sits endemic to Western approaches to war. While must criticism is labeled at the Germans in World War II, their approach was to try and match tactical victories as a means to form strategy. As they sought swift and decisive victories, the Nazi strategic war aims expanded with each tactical victory, culminating in 1941 with the Axis invasion of the Soviet Union. See Unknown, *War Studies: A Textbook for the 21st Century British Officer* (Sandhurst: Royal Military Academy Sandhurst, 2004), 81. The flaws in the German way of war were evident were before 1939 and, arguably, before 1914. This relates to the strong emphasis on the extremes of Napoleonic offensive action, ensuring rapid decisive victory over an enemy. From the Second Reich onwards there was a lack of recognition in German policy of the utility of the other instruments of national power. This resulted in a very quick gravitation to military means. See Holger Herwig, "The Prussian Model and Military Planning Today," *Joint Force Quarterly* (Spring 1998), 65; Jack Watson, *Success in Twentieth Century World Affairs* (Norwich, UK: Fletcher and Son Ltd, 1981), 142.

[110]CJCS, *Joint Vision 2010* (Washington, DC: US Government Printing Office, 1997); *Report of the Quadrennial Defence Review* (Washington, DC: US Government Printing Office, 1997), 39-42; Alvin H. Bernstein and Martin Libicki, "High Tech: The Future of War?" *Commentary* (January 1998): 28-32.

[111]For additional reading on how the US military reached this position, see the excellent analysis in Russell F. Weigley, *The American Way of War: A History of U.S. Military Strategy and Policy* (Bloomington, IN: Indiana University Press, 1973), 475.

this should be eschewed, but it must be concurrent with a policy that supports rapid disengagement from conflict, otherwise this lack of consistency will override the advantages from the base imperative.[113] Yet, as is evidenced by Israel, preparing for this type of rapid decisiveness is not always effective without additional emphasis in multiple possible constructs of war. One ignores trending scenarios at one's peril.

A Case for Blitzkrieg – Short Lived Advantages and Fundamental Surprise

> …the dazzling victory in the '67 war...contributed to building of a myth around the IDF and its personnel. The common expectations from the IDF were that any future war would be short with few casualties.[114]
>
> —Major General Avraham Adan, *On the Banks of the Suez*

The 1967 Arab-Israeli War redefined the landscape of the Middle East. The advanced technology of the Israeli forces enabled a rapid and decisive victory over the Egyptian Army through offensive strike capabilities.[115] This catastrophic success by the Israeli Defense Forces changed the balance of power and the view of military technology. Subsequently investing heavily in the armored capabilities that enabled the 1967 victory, this skewed the frame of technological superiority in the offense.[116] This ignored the necessity to fully integrate capabilities and for organizational superiority in order to translate superior technology into superior strategic performance. The 1973 Yom Kippur War evidenced the problems inherent in this approach, with an Israeli force facing near disaster due to an opponent able to negate its

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[112]Gideon Rose, *How Wars End: Why We Always Fight the Last Battle* (New York: Simon & Schuster Paperbacks, 2010), 220.

[113]Damaging to an equal extent is the involvement in a series of sustained limited conflicts as the cumulative effect of over-commitment reinforces this problem.

[114]Avraham Adan, *On the Banks of the Suez* (Novato, CA: Presidio Press, 1980), xii.

[115]Eligar Sadeh, *Militarization and State Power in the Arab-Israeli Conflict: Case Study of Israel, 1948-1982* (Universal-Publishers, 1997), 89.

[116]For a comparatively unbiased assessment of the Israeli Infantry and Armored capabilities during the 1967 and 1973 Wars see Jac Weller, "Armor and Infantry in Israel," *Military Review* 57 (April 1977): 3-11.

offensive effectiveness through highly emphasized defensive capabilities. Jonathan House provides a cogent argument relating to the effect this had on the *blitzkrieg* warfare originally envisaged by J.F.C Fuller and Basil Liddell-Hart.[117]

The Israeli experiences of both the 1967 and 1973 wars support the view that the effects of *blitzkrieg* are now only possible through massing significant combat power. Technological advances made to the battlefield place a much less reliance on psychological confusion without numerical superiority. This correlates with Stephen Biddle's view of numerical preponderance as a determinant of capability and the representative place for mass on the battlefield.[118] In 1973 the Egyptians were able to nullify the technological strengths of the Israeli armor and fighter-bomber support through anti-tank and air defense weaponry. Therefore, technological vulnerabilities will prevent one side from gaining the necessary advantage to execute a *blitzkrieg* effect.[119] Israeli limited investment in complementary capabilities for the battlefield meant that they were unable to fully leverage their technological superiority. It was only the Israeli ability to rapidly innovate on the battlefield that led to their success.

The similarities of this dynamic of battlefield symmetry to be considered today are threefold. First, doctrinal or technological advantages are short lived. The Israelis structured to fight a single form of battle, heavily dependent on their perceived 1967 technological advantages. As such, their enemy analyzed this and mitigated the strengths of this form of warfare. Secondly, to remain adaptable on the battlefield it is necessary to retain complementary capabilities that can adapt to the changing environment. This may mean duplicating capabilities in different platforms

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[117]Jonathan House, *Towards Combined Arms Warfare: A Survey of 20th Century Tactics, Doctrine and Organization* (Fort Leavenworth, KS: Combat Studies Institute, 1984), 176-179.

[118]Stephen Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton: Princeton University Press, 2006), 14-15.

[119]The inability of the Israeli forces to execute their predetermined blitzkrieg strategy validates this view. The exponential development and globalized diffusion of military technology illustrates the problems of achieving this again at any point in the future.

that will appear counter-intuitive to the taxpayer.[120] Finally, if a *blitzkrieg* effect is required then a force will need to leverage every capability, noting that the capability measure to deliver psychological shock is numerically based. For Israeli forces, this aligns to Zvi Lanir's concept of fundamental surprise; an event that reveals a personal, group or national mindset as irrelevant and misleading in interpreting the occurrence.[121] The Israeli forces were not prepared to see the changes that were occurring around them until forced to change.[122] The prevalence of the idea of technological and organizational superiority blinded them to the need to continually innovate; to paraphrase the thesis of Gideon Rose, they were solely structured to fight the last war.[123] Fortunately, they were successful, reacting and rapidly adapting in contact, breaking the inherent cognitive dissonance that existed in organizational learning.

> As the Arab use of anti-aircraft missiles in the 1973 war against Israel demonstrates once again, the distinction between "offensive" and "defensive" weapons is largely spurious.
>
> — Martin van Creveld, *Technology and War*

So, given this lesson from the school of hard knocks, one expects Israel to have organizationally reshaped their forces based on these historical miscalculations. Ironically, this is not the case. An extreme example of the risks of a singularly focused strategy is Israel's military force in the past decade. Seeking military advantage through a technologically deterministic strategy designed to overwhelm Hezbollah forces, a change to the nature of conflict unbalanced

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[120]There are clear parallels to the US and UK militaries of today in that it is not possible to give primacy in a single area. It is the complementary effect of the human, technical and information dimensions that deliver tactical advantage and operational success.

[121]See Zvi Lanir, *Fundamental Surprises* (Tel Aviv: Center for Strategic Studies, 1983), 68-87 for an excellent discussion of the issues inherent in the Israeli approach to the Yom Kippur War.

[122]This cognitive bias is endemic to Senge's view that "what we see depends on what we are prepared to see." Peter Senge, *The Fifth Discipline* (New York: Currency-Doubleday, 2006), 73.

[123]For an examination of American intervention since World War, see the complete book of Gideon Rose, *How Wars End* (New York: Simon and Shuster, 2010). Throughout, he discusses the inherent difficulties in preparing for future conflicts. The requirement exists not to sit on past glories but to plan more carefully, especially at the military-civilian interface.

the approach. The focus of Israel was to exploit the perceived weaknesses of Hezbollah, through a predominance of air power.[124] Technology superiority through advanced conventional weaponry would deliver decisive victory.[125] Sound familiar? However, not recognizing that it should only fight in the manner its opponent wanted, Hezbollah sought to combine its own capabilities into a hybrid approach. This unbalanced the paradigm upon which Israel had based its capability development.[126] Emboldened by Iranian support, Hezbollah challenged the status quo in 2006, ignoring the traditional rules of conflict, using operational shields to deceive intelligence on their intentions.[127] This need to rapidly analyze and exploit information becomes even more operationally imperative against a hybrid threat. While this occurred several years before the Arab Spring, beginning in 2010, the effect of Hezbollah ability in challenging the narrative of Israeli dominance bolstered the hubris of regional non-state actors.

Equally apparent within this is the ability for Hezbollah to withstand strategic surprise.[128] While potentially not intending to provoke all out conflict in 2006, previous preparations enabled flexibility and adaptability with the decentralized Hezbollah approach. The preceding six years saw Hezbollah absorb new technology and apply new tactics to their approach. In this, surviving the Israeli offensive actions was the only necessity to achieve the strategic victory of degrading Israeli prestige.[129] Overall, this managed to isolate Israel as the perceived aggressor on the

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[124]Sarah Kreps, "The 2006 Lebanon War: Lessons Learned," *Parameters* (2007), 75-77.

[125]Williamson Murray, *Hybrid Warfare: Fighting Complex Opponents from the Ancient World to the Present* (Cambridge: Cambridge University Press, 2012), 290.

[126]For discussion on the 2006 Lebanon campaign see, Itai Brun, "The Second Lebanon War, 2006", *A History of Air Warfare* (Washington DC: Potomac Books, 2010), 297; Stephen Biddle and Jeffrey A. Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle Barracks, PA: Strategic Studies Institute, 2008).

[127]Iranian involvement in the 2006 Lebanon War is discussed by Professor Eyal Zisser in "Iranian Involvement in Lebanon", *Military and Strategic Affairs* 3, no.1 (May 2011): 3-16.

[128]David Makovsky and Jeffrey White, *Lessons and Implications of the Israeli-Hizbollah War,* (Washington, DC: Washington Institute for Near East Policy, 2006), 10.

[129]The ability of Israeli to degrade support for Hezbollah through an indirect approach against the

international stage through Israeli attempts to leverage air power indiscriminately to achieve indirect effect.[130] The net effect was a lack of decisive victory for Israel, with the conflict terminated through the intervention of the UN.[131] For Israel, 2006 invalidated the approach of over-emphasis on airpower to the detriment of a ground capability, with Hezbollah anti-tank weaponry capable of stalling Israeli advances.[132] This limited the effectiveness of the traditional Israeli armored strength, with few alternate means, such as dismounted close combat infantry, to exploit initiative.

The irony embodied in the lack of Israeli military forethought against a changing security environment reinforces the need to maintain a full spectrum war fighting capability. Or does it? For Israel, the overemphasis on technology over technique negated the strengths inherent within their military forces. Constantly committed against a posture designed to maintain Israel's position in the Middle East, they had lost the flexibility that allowed the operational reorientation while in contact evidenced in 1973. In this, a more agile and flexible opponent denied Israel its traditional maneuverability, while maintaining pressure, forcing a reactive posture to Hezbollah efforts. The net effect saw an increase in action by Israel that eroded its perceived legitimacy in reacting to a terrorist incident. Continually acting as a 'localized experimentation center' for the United States, the lessons are clear. However, the true importance of new approaches is evidenced in the application of cyber as a fully effective and complementary mode of warfare.

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population is outlined very well in Anthony Cordesman, *Preliminary "Lessons" of the Israeli-Hezbollah War* (Washington, DC: Center for Strategic and International Studies, 2006), 14. Hezbollah were able to negate the influence of both the direct and indirect approaches of Israel to achieving success.

[130]Sarah Kreps, "The 2006 Lebanon War: Lessons Learned," *Parameters* (2007): 79-81.

[131]Andrew Exum, *Hizbollah at War: A Military Assessment* (Washington, DC: Washington Institute for Near East Policy, 2006), 12. An excellent piece, Andrew Exum outlines the causal link between the tactics employed by Hezbollah and the likely adoption by future threat streams.

[132]David Makovsky and Jeffrey White, *Lessons and Implications of the Israeli-Hizbollah War* (Washington, DC: Washington Institute for Near East Policy, 2006), 35.

An Ill Defined Threat Space – Cyber and the Russian-Georgian War of 2008

The potential efficacies of the cyber domain to deliver military advantage feature extensively in futurist discussions. The fear of an electronic 'Pearl Harbor' creates a causal logic for discussion.[133] For Western powers, the strategic implications of the level of cyber dependence mean that doing nothing is impossible.[134] The West is 'strategically fragile.'[135] The manifestation of threats, coupled with its potential ubiquity as a mode of warfare, means that the offense currently has the upper hand.[136] This sits logically with the view of the nascent and evolving nature of technological and military theory in this domain against policy for action. In information warfare terms, its applicability from the individual to whole populations see a further blurring of the distinction between military and civilian targets and its use for hard or soft effects.[137] But why is this a new? It is not. However, relative difference is confusing decision makers. What has changed is the relative ease of application of warfare, coupled with the depth of concurrent action. In light of the realities of the future environment, the concern is that if unchecked the problems exacerbate exponentially. The Russia-Georgia War of 2008 clearly illustrates the macro effect of cyber and why military technological superiority alone cannot be a guarantor of maintaining advantage in this space.

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[133]While now a little dated, for a discussion of the early attempts to define an electronic 'Pearl Harbor' see Bruce Berkowitz, *The New Face of War – How War will be Fought in the 21st Century* (New York: Free Press, 2003), 135-154.

[134]For an excellent discussion on the strategic implications of cyber to national security see Richard A. Clarke and Robert K. Knake, *Cyber War: The Next Threat to National Security and What to do about it* (New York: Harper Collins Publishers, 2010). For explicit discussion on the likelihood of the failure of defensive measures see 103-149. For cyber discussion by a country of similar dependence but less resources than the US see HM Government, *A Strong Britain in an Age of Uncertainty – The National Security Strategy* (London: The Stationary Office Limited, 2010), 25-33.

[135]See Robert Miller and Irving Lachow, "Strategic Fragility: Infrastructure Protection and National Security in the Cyber Age", *Defense Horizons* (Washington, DC: NDU Press, 2008): 1-2.

[136]The view of this threat is outlined by then Deputy Secretary of Defense in William J. Lynn III, "Defending a New Domain – The Pentagon's Cyberstrategy," *Foreign Affairs* 89, no.5 (Sept/Oct 2010): 99.

[137]Joseph S. Nye, *The Future of Power*,122-132.

The Russian-Georgian conflict demonstrates the synchronized effect of conventional and cyber action. Russian cyber shaping operations directly affected the Georgian command and control architecture both internally and externally.[138] This denied the Georgian government from speaking to its people, coordinating its military, and communicating on the global stage. Equally, it degraded financial and social infrastructure without the use of kinetic means. Overall, this placed psychological pressure on all aspects of the Georgian state prior to Russian military advances across the border.[139] This was complemented by extensive strategic communication initiatives by Russia to control the conflict's narrative, while continuing to deny Georgia a voice. While this had a relative lack of success in shaping global opinion, it does not degrade from the effectiveness of this type of approach to control the narrative. Overall, the effect in degrading Georgia's military capability was limited, mainly due to its level of technology adoption. As a low technology force, it was still able to function. For the high technology forces of the West, if defensive means are insufficient, this equals strategic paralysis.[140]

The lesson from this conflict is the role of cyber in combining to execute conflict in a hybrid manner. Theoretically, this plays to the West's advantage, utilizing its high technology base to deliver complementary effects to the virtual and physical battle space. However, no quantifiable proof was generated that linked the cyber actions back to the Russian government. Plausible deniability exists at its best.[141] Civilians were encouraged to download tools from a server, executing a distributed denial of service attack against Georgia.[142] Therefore from initial

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[138]See the report by the US Cyber Consequences Unit, "Overview by the US-CCU of the Cyber Campaign Against Georgia in August of 2008," *A US-CCU Special Report* (August 2009): 6.

[139]See Jeffrey Carr, *Inside Cyber Warfare* (Sebastopol, CA: O'Reilly Media, 2010), 161-169.

[140]For a discussion on this future war scenario see Andrew F. Krepinevich, *Deadly Scenarios: A Military Futurist Explores War in the 21st Century* (New York: Bantam Books, 2009), 230-250.

[141]Jeffrey Carr, *Inside Cyber Warfare*, 119.

[142]In addition to Jeffrey Carr, *Inside Cyber Warfare*, 2010, 15, see the article by a journalist on how they were able to easily become part of distributed attack. Evgeny Morozov, "An Army of Ones and

investment, an economy of scale growth was exponential, utilizing individuals to deliver a capability in a multi-dimensional manner ignorant of state boundary or identity.[143] At low cost, capabilities are accessible to all players, from the conventional to the extreme non-state actor. The servers used to attack Georgia were traced back to the crime syndicate Russian Business Network.[144] This challenges the traditional state concept of control, questioning whether it is possible to gain a superior edge in an environment dominated by the individual. Arguably, in this instance the control of the virtual narrative both informed and enabled the creation of a virtual cyber force.[145] Yet, critically once set in motion, the self-organization of swarm logic is more applicable. While effective as a hybrid approach, it cannot be controlled.

The relatively simple nature of the Georgian cyber attack is demonstrable of the wariness that needs to be applied by US to the cyber domain. Conflation of threats, or ignorance of perceived lesser imperatives clouds the issue. The combination of cyber and kinetic capabilities by Russia illustrates the folly of elevating China as a principal threat. There is no principal threat. Strategic cyber capabilities are accessible to all. Measures of success are determined by deniability; not getting caught is the norm for cyber conflict. Russia is indicative of a country

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Zeroes – How I became a soldier in the Georgia-Russia Cyberwar," *Slate* (14 August 2008): 1-3.

[143]Equally challenging is the position of international neutrality by a country's citizens that assist in the attack. Similarly, it is possible for services to be relocated to a country without their permission. This occurred in this case with Georgia's national websites re-hosted by servers within the continental US. While a solution is yet to be found within international norms, the implications of the Georgian conflict are discussed extensively in Stephen Korns and Joshua Kastenberg, "Georgia's Cyber Left Hook," *Parameters* (Winter 2008): 60-76.

[144]This prevalence of this criminal dimension sitting more centrally within the threat nexus is equally demonstrated by non-state actors, such as Al Qaeda and Hezbollah integration with criminal enablers. See Liana Sun Wyler, *Weak and Failing States: Evolving Security Threats and U.S. Policy* (Washington, DC: Congressional Research Service, 2008), CRS-7; Christina Schori Liang, *Shadow Networks: The Growing Nexus of Terrorism and Organised Crime* (Geneva: Geneva Centre for Security Policy, 2011), 2.

[145]The ease by which this process can occur in cyber's virtual space is outlined in Clay Shirky, *Here Comes Everybody: The Power of Organizing with Organizations* (New York: Penguin Press, 2008), 155.

that takes a different view of information warfare to the United States.[146] This nullifies the traditional high technology view of heavy capabilities to the battlefield. The 'political battlefield' is enabled by the use of cyber capabilities to negate the utilization of military forces. Here, individuals, criminals, state apparatus, and the military demonstrated the true effectiveness of a hybrid approach to cyber warfare. Boundary agnostic, it is likely this use in this manner will increase. This affords threats the ability to challenge US hegemonic power by targeting weaker states that are aligned to US ideology, without engaging directly. The competing demands of moving to, and remaining in, the multi-polar world of states and super-empowered non-state actors may make this the new determinant of security.

Touching the Void of Indifference

No matter how advanced military technology becomes, it cannot replace the need for operational art in the linking of strategy to effect.[147] Yet, once technologies are introduced, they cannot be undone.[148] The ability to take a strategic pause in terms of its military is a concept not available to the United States. To do so risks undermining the support it provides to its hegemonic influence and soft power. Yet, cognitive dissonance to a problem clearly compounds the error of doing nothing. The question that exposes itself is less one on the invalidity of a strategy of technological superiority but more how this is to be employed across the modes of warfare. The relative positioning for more adaptable elements of the military instrument through strategic choice may provide the mechanism for change. While assuming one will suffer from

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[146]For discussion of the Russian view of information warfare and its confluence with cyber operations see Timothy Thomas, *Cyber Silhouettes: Shadows Over Information Operations* (Fort Leavenworth: Foreign Military Studies Office, 2006), 80.

[147]Michael Sheehan, "The Changing Character of War," in John Baylis et al, *The Globalization of World Politics: An introduction to International Relations* (Oxford: Oxford University Press, 2007), 216; also from a Naval perspective see Milan Vego, "Technological Superiority Is Not A Panacea," *Proceedings Magazine* 136 (Oct 2010): 2-6.

[148]Peter Paret (ed). *Makers of Modern Strategy – from Machiavelli to the Nuclear Age*, 640.

strategic surprise should never be the assumption by which to enter conflict, a more balanced approach to mitigate the potential effect of this can only be an advantage.

The critics of this last comment will clearly state that this is normal jogging. This is what the US and its allies do already. However, the counter to this is that if the base assumptions on which military forces are developed are inaccurate, then the maintenance of any form of 'full spectrum capability' is likely to force a reactive posture from the start. Without overarching strategic vision, this leads to the confluence of operational effectiveness as the determinant for success, but more of this to follow. To bypass this reticence for change requires a thorough rethink of the environmental frame of war and how it interfaces with the 'other.' The relative nature of comparative advantage demands that choices in military capabilities are made against a more coherent plan than a best guess for an unknowable future. We cannot expect that emergent threats and own known enemies will not challenge the status quo.

> It is now time to recognize that a paradigm shift in war has undoubtedly occurred: from armies of comparable forces doing battle on a field to strategic confrontation between a range of combatants, not all of which are armies, and using different types of weapons, often improvised.[149]
>
> —General Sir Rupert Smith, *The Utility of Force*

[149]Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (New York: Random House, 2007), 5.

TECHNOLOGICAL SUPERIORITY - THE CURRENT DETERMINANT?

> The idea of the future being different from the present is so repugnant to our conventional modes of thought and behavior that we, most of us, offer a great resistance to acting on it in practice.[150]
>
> —John Maynard Keynes

Past as the Continued Prologue

History's irony is that the lessons for future war in a post-World War I era were learned almost exclusively by a defeated Germany and an internationally isolated Soviet Union.[151] Representing an inflexion point, transitioning the nature of warfare at the time, their integration of these lessons became evidenced in the decisive effects of maneuver warfare at the start of World War II.[152] Yet, this Revolution in Military Affairs (RMA) was still incapable of providing strategic victory for Germany.[153] Technological superiority and operational successes suffered from a dissonance between strategy and military means.[154] Therefore, Germany sat strategically disconnected, with a political dimension highly influenced by military thinking, demonstrating an

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[150]John Maynard Keynes, "Some Economic Consequences of a Declining Population," *Eugenics Review* 29, no.1 (April 1937): 13-17.

[151]This is in spite of the work of Basil Liddell-Hart, JFC Fuller and Charles De Gaulle in Britain and France respectively during the inter-war period. For further explanation see Brian Bond and Martin Alexander's essay in Peter Paret (ed). *Makers of Modern Strategy – from Machiavelli to the Nuclear Age*, 598-623.

[152]The start of World War II demonstrates the effect when a single power makes the organizational and operational choices to correctly exploit innovative technology. The German concept of maneuver warfare, support by land and air capabilities enabled sweeping victories in the early years of the war. For a discussion on the development of blitzkrieg see Shimon Naveh. *In Pursuit of Military Excellence – The Evolution of Operational Theory* (New York: Frank Cass Publishers, 2004), 103-167.

[153]Revolution in Military Affairs – The assembly of a complex mix of tactical, organizational, doctrinal, and technological innovations in order to implement a new conceptual approach to warfare or to a specialized sub-branch of warfare. Williamson Murray and Knox MacGregor (ed), *The Dynamics of Military Revolution 1300-2050* (Cambridge: Cambridge University Press, 2001), 12.

[154]Analysis of the German approach illustrates that an inherent tacticization of strategy occurred across the Western Front. Experiences that worked well at the operational level were increasingly counter-productive at the strategic level; this ignored the necessary underpinning Clausewitzian logic that an overarching achievable strategy unifying complimentary effort is crucial for military success. Carl von Clausewitz, *On War*, 178. For coherent explanation of this effect see Michael Handel, *Masters of War – Classical Strategic Thought* (Oxford: Frank Cass Publishers, 2005), 46, and Kenneth Macksey, *Why Germans lose a War: The Myth of German Military Superiority* (London: Greenhill Books, 1996), 228.

inability to capitalize on these operational advantages and leading to overstretch.[155] The Allies illustrate the anti-thesis to this approach in the latter stages of the war, matching capabilities to a strategy designed to sequentially defeat the Axis powers. The lessons from this period are that strategic appreciation is a necessity of warfare and that analysis of the enemy must be based on resources, weaknesses, enemy intentions and objectives. Effectiveness is determined by how best an actor is able to match this against one's own goals, policies, and alternatives for action. As an underpinning logic, how this problem is approached is critical to balancing strategic choices, the posturing of forces, and the investment in technology and capabilities.

Since the end of the Cold War, arguments have persisted that the world is at a similar inflexion point, with advocates reengaging the RMA concept, with evidence demonstrated by the decisive victory against Iraq in 1991.[156] The Iraq War used innovative information technology and stressed high quality weaponry for rapid decisive victory over Iraqi Forces. This new era represented an information age of warfare, different than the preceding and requiring technologically driven solutions to complexity.[157] Validating the previous thoughts of many, it silenced the naysaying critics of the technological development strategies that shaped the Cold War.[158] With an irreversible RMA determined as changing the nature of warfare, mastering it

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[155]For analysis on the inherent issues within German leadership see Basil Liddell-Hart, *The German Generals talk: Startling Revelations from Hitler's High Command* (New York: Quill, 1975), 30.

[156]Gerrard Quille, "The Revolution in Military Affairs and the UK," *International Security Information Service Briefing*, no. 73 (December 1998).

[157]See Eliot Cohen, "A Revolution in Warfare," *Foreign Affair* 75 (1996): 37-54. An explicit counter to this view of the 1991 Gulf War is in Williamson Murray and Robert H. Scales Jr, *The Iraq War: A Military History* (Cambridge: Belknap Press, 2005), 239-240.

[158]The effect of the 1991 Gulf War reduced the importance of troop numbers, validating the logic behind a technology-based strategy of military capabilities. In the US and UK respectively, this generated the concepts of network-centric warfare and network-enabled capability as the means to leverage this new environment. These represented new paradigms of war fighting, yet the lack of realization of the dividends proposed suggests that they were developed against the wrong principles or base assumptions for today's chaoplexic world. Substantive of the view of the time is Hallion's assessment of air as the panacea for all conflict. Technology conquers all through effects based precision. See Richard Hallion, *Storm over Iraq: Air Power and the Gulf War* (Washington, DC: Smithsonian Institution Press, 1992), x.

became the 'assured route' to victory. The concept of RMA thus became a driver for defense policy, justifying doctrinal changes, fiscal resourcing and changing structures.[159] The predominant view existed that RMAs could be controlled through a strategy that prioritized rapid technological adoption. For the United States, technological dominance represented a deliberate strategic choice after World War II, enabling it to qualitatively overcome the significant quantitative advantages afforded the Soviet Union throughout the Cold War.[160] In the post-Cold War era, continued technological dominance of the military paradigm successfully reinforced the new US position as the world's hyper power.

So what? Reflectively, this period transitioned the view of military capabilities towards building from a foundation of quality over quantity for operational effectiveness. While not nullifying the effect of mass on the battlefield, this provided a perspective favoring the perceived advantages that technology provides. This confers that the superior quality of military technology will be capable of mitigating quantitative advantage, ensuring decisive victory against a short time imperative.[161] The logical rationality is that technological superiority accords military advantage and thus ensures strategic equilibrium, such that alternative strategies are insufficient

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[159]For discussion on the role RMAs had in shaping strategy in the mid-1990s see Steven Metz and James Kievit, *Strategy and the Revolution in Military Affairs: From Theory to Policy* (Strategic Studies Institute, 1995), v. Sitting as a controversial skeptic of this driving philosophy, Colin Gray argued for social change as the precipitating catalyst for a RMA, sitting in the same theoretical camp as Williamson Murray. For further reading on RMAs and the implications for a future environment see Colin S. Gray, *Strategy for Chaos – Revolutions in Military Affairs and The Evidence of History* (London: Frank Cass Publishers, 2002) or the more recent, Colin S. Gray, "Recognizing and Understanding Revolutionary Change in Warfare: The Sovereignty of Context" (Monograph, Carlisle, PA: Strategic Studies Institute, 2006).

[160]Millet and Maslowski discuss the view that throughout the 20th Century the US has relied on superior technology to counter the inherent limitations of strategic power and match enemy numbers with firepower. See Allan R. Millet and Peter Maslowski, *For the Common Defense* (New York: The Free Press, 1994), xii. To understand this role of technology equally see Michael Howard, *War in European History* (New York: Oxford University Press, 1976), 116-135; Colin S. Gray, "U.S. Strategic Culture: Implications for Defense Technology," *Defense Technology* (1989): 31.

[161]The bumper sticker for this approach is solidified in, 'war cannot be won with inferior weapons.' Thus, technology is able to reduce the uncertainty existing in the chaos and complexity of war.

to overcome this superiority. The continued dominance of the United States has led to the self-referential effect of technological dominance as the *sine qua non* defining the nature of the US military position in relation to all adversaries. Yet, this ignores the position that technological dominance, enabled by a strategy of technological superiority, is a strategic choice, one that must be continually evaluated for relevance. The irony of this referential preponderance is that most contemporary theorists argue for the interplay of multiple competing factors to generate an overarching military strategy, rather than technology as a central tenet. [162] However, Western strategic culture continually identifies itself with technological superiority as the mechanism by which to seek strategic superiority.

> Strategic culture is on the battlefield inalienably because it pervades the combatants and their military organizations.
>
> —Colin S. Gray, *Modern Strategy*[163]

This strategic culture shaped and now defines the character of Western military forces, especially the United States and the United Kingdom. Through deriving technological superiority as the essential element to deliver both defensive deterrence, and large-scale strategic effect in the offense, these militaries now rest at the interplay of this legacy. The importance of its continued consideration is amplified by the changing nature of the future security environment. Defined by a capabilities based approach to military planning, reductionist cognitive paradigms now sit as institutional norms.[164] These seek to quantify observed phenomena, reducing to singular

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[162]While the debate will continue ad infinitum on the role of technology in RMAs, recognition is made that while significant, they seldom are the exclusive factor. See Ron Matthews and John Treddenick, *Managing the Revolution in Military Affairs* (Hampshire, England: Palgrave, 2001), 43.

[163]Colin Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999), 144.

[164]From a military perspective at the operational and tactical levels, a time imperative consistently overrides the utilization of multiple perspectives to achieve understanding. The time imperative is often cited as the 'rational explanation' and rather than a coherent, relevant, and considered answer to a problem, the approach is more often, "give me an answer now, I'm not concerned about the level or detail of your analysis, I just need an answer." The application of resources can often overcome poor planning through additional reserves, negating operational culmination or failure due to military overextension. These

elements that can then be acted on at the tactical level.[165] This often ignores the value of praxis as an interactive acting and learning process, improving understanding through reframing reality.[166] With strategic horizons determined by technological choices, technology has become the driving force, dictating to strategy how to engage with adversaries. The net effect is that strategy is now conceived as the employment of the system and becomes defined by operational effectiveness, not its ability to enable strategic positioning. Military action therefore ceases to be an extension of policy or it collectively reinforces strategic dissonance between policy makers and the military.

This is not to contend that differing approaches do not exist, however, military forces remain defined overall by a holistic cognitive blindness, coming from these central tenets of technology and reductionism in planning. These shape the context of the current generation, emphasized in the emergent issues of the Iraq and Afghanistan campaigns and are exposed in the strategic dissonance that exists between policy and military strategy.[167] Yet, this is to be

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comments do not denigrate the need for rapid reductionist planning at the tactical level, however the compounding effect of the macro level is likely to deliver unsynchronized output. Overwhelming superiority, coupled with an incompetent enemy are possibly the only situations that would negate the effects of a poor mission analysis.

[165]This approach requires a prevalence of information by which to undertake the necessary decisions. The inherent issue is that the hyper reality determined through deconstruction of observed phenomena forms the central underpinning philosophy driving action. Observation and analysis using this view fix the perspective in a single moment, ignoring where the system will evolve over time. Subconsciously, this creates an inability to distinguish between reality and the constructed simulation, with emergent trends explained away as insignificant. Dietrich Dörner labeled this problem of framing in a way that obscures the information necessary to resolve the situation as one of "intrasparence." He observed that planners "...may have to look, as it were, through frosted glass. They must make decisions….whose momentary features they can see only partially, unclearly, in blurred or shadowy outline – or possibly not at all." This uncertainty recognizes the view that once you act on the environment you change the logic of the paradigm. Action in itself thereby provides the stepping-stone to the next version of reality rather than fixing a singular view that is inherent in the modernistic and reductionist mindset. For further explanation see Dietrich Dörner, *The Logic of Failure* (New York: Metropolitan Books, 1996), 40.

[166]For understanding of systemic thinking and the philosophical approach to reframing see Zvi Lanir and Gad Sneh, *The New Agenda of Praxis* (Tel Aviv, Israel: PRAXIS, 2000).

[167]Hal Brand provides an up to date analysis on the nature of this strategic dissonance, recognizing the traditional universalistic tendencies that Washington decision makers often apply to foreign policy. See Hal Brand, *What Good is Grand Strategy?* (Ithaca, New York: Cornell University Press, 2014), 157-177. Also see commentary on the 2014 Afghanistan Elections and whether Western intervention achieved its

expected. The 'Technological War' that existed during the Cold War informed this endemic culture and is a generational issue for adaptation. Success in this adaptation necessitates changes in the philosophies, approaches, and meta-theoretical underpinnings of Western militaries. This is no easy task, requiring institutional reinforcement to create the mechanisms necessary for organizational shifts in support of a state's strategic goals and the confluence of threat. There will always remain the question as to why change could, should, or would be necessary. Inherently, positive self-deception is an entirely normal process and, according to Taylor and Brown's view, an essential part of a functioning individual, applicable equally to the military apparatus as a comparable whole.[168] However, this creates an internal organizational bias potentially ignorant to change drivers.[169]

As an epistemological approach this, coupled with the reductionist mentality, implies a modernistic mindset to the security dilemmas within the military domain. As a driver for action, more information will thereby enable the creation of a theory through which to act and apply the necessary resources. However, this assumes a similar logical linearity to that of the enemy and its environment.[170] Yet, the past decade in conflict has created an operating environment unlike any other. As a result, the military on operations today is unrecognizable at lower levels from that of

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purpose by Rory Stewart, "Afghanistan: Britain Got Almost Everything Wrong and Should Admit Its Failure," *The Telegraph* (13 April 2014).

[168]Shelley Taylor and Jonathon Brown. "Illusion and well-being: A social psychological perspective on mental health". *Psychological Bulletin 103*, no.2, (1988): 193-210. Taylor and Brown assert three areas of cognitive biases that enable normal functioning, the relevance of each to a military institution looking to the future is self-evident. These biases are: viewing of oneself in unrealistically positive terms; believing that more control exists over the environment than actually does; and, holding views about the future that are more positive than the evidence can justify.

[169]This approach of 'staring' into change rather than 'shifting' is illustrated throughout Joshua Ramo, *The Age of the Unthinkable: Why the New World Disorder Constantly Surprises Us and What We Can Do About It* (New York: Little, Brown and Company, 2009), 162.

[170]There is an inherent value to undertaking this type of agent-based analysis, as it can produce emergent-based properties allowing understanding of human interactions within the system. Yet, this inherently does not mean that agents will act exactly according to theory based on emergent behavior, especially if that is based on a single snapshot of time.

the classic Weberian rigidly top-down hierarchy of the past.[171] The strategies of technological advancement on the battlefield acted as the instrumental factor in organizational change, leading to a redefinition of the vertical and horizontal dimensions of command and control.[172] Fast, agile units now employ every sensor to feed situational systems, intended to enhance the speed of decision-making cycles. Against a pillar that seeks to control the information domain, tactical and operational changes have created flatter lower-level command structures. In the quest to satisfy this information driven environment and thus employ capabilities, rapid passage of information upwards with little or no analysis has become the de facto standard. This sits in ignorance of the destabilizing effect on decision makers. In many respects, this mirrors the traditional paradigm of information exchange, in that more information should reduce uncertainty and therefore make decisions easier. However, by not recognizing the 'tipping point' of information overload, the military has effectively constrained its decision makers.

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[171]From an organizational standpoint, it is important to acknowledge the business space in regard to this change from classic hierarchies towards flatter structures. As expected within an institutional bureaucracy such as the military change is inherently slower, potentially by a decade or more in organizational reform. However, the business space has been trending towards globalization, diversification, and flexibility to copy with the changes to its environment. Organizational structures have migrated towards Drucker's vision of the 21st Century whereby flatter structures are necessary to meet information driven domains. This does not suggest that a hierarchy is irrelevant but that within them elements of flatness are more effective. Three references provide an excellent overview to enable the military professional to understand business organizational theory. First, the article by Mitroff et al discusses the significance of the environmental change representative of that from the Agrarian to the Industrial Age. Mitroff, I., Mason, R.O. and Pearson, C.M., "Radical Surgery: What will tomorrow's organisations look like?" *The Academy of Management Executive* 8, no.2 (1994): 11; Second, for discussion over representative trends see Curry, A., Flett, P., Hollingsworth, I., *Managing Information and Systems: The Business Perspective* (Abingdon: Routledge, 2006); Finally, see Drucker, P., *Management challenges for the 21st century* (New York: Harper Business, 1999).

[172]This sits closer to Yaneer Bar-Yam's view of complex organizations and the emergence of networks over traditional hierarchy. See Yaneer Bar-Yam, *Making Things Work: Solving Problems in a Complex World* (Massachusetts: NESCI Knowledge Press, 2004), 104; also see John P. Kotter, *Power and Influence* (New York: The Free Press, 1985), 38.

Invalid Assumptions of Relative Advantage

The campaigns of Iraq and Afghanistan evidence this constraining effect of information overload and reductionist planning, manifesting in a lack of campaign coherence.[173] With strategy conceived as the employment of the system, it ignored the role of the strategic paradigm in ensuring consistence at the civil-military interface. Rather than questioning the base assumptions of military strategy, a 'long screwdriver approach' to operational planning emerged from those charged with the provision of military advice to civilian leadership. In a manner recognizant of the German Army of the Second World War, this could possibly be viewed as the tacticization of Western strategy. As such, an inability existed to capitalize on many operational advantages due to a dissonance with the impact and strategic significance. Overall, the traditional logic that a technologically superior force could easily adapt to the full spectrum of threats was found wanting in both environments. Where technology embodied the solution to reduce the fog and friction of war, the reality is that technological change fundamentally increased it.[174] Low technology, high concept approaches to warfare afforded tactical opportunities and strategic advantages to asymmetric opponents.[175] An agile threat was capable of freezing the decision-making paradigms of an allied military force through the application of indirect methods. The

[173]For discussion on linearity in thinking see Paul Davidson Reynolds (*A Primer on Theory Construction*, Boston, MA: Allyn & Bacon, 2007). This does not prevent our ability to understand complexity, however it can limit forces to reducing problems to single variables. Overall, this can create holistic blindness, 'we cannot see the wood for the trees.'

[174]The 1990s concepts of network-centric warfare and network-enabled capability sought to reduce friction through technology, yet the reverse has been the case, increasing the friction of forces. Worse yet, belief in technology and 'icons on maps' has superseded the analysis of real reporting, leading to fratricide. For further discussion see William Owens, *Lifting the Fog of War*, 15 and Antulio J. Echevarria II, *Clausewitz and Contemporary Conflict* (Oxford: Oxford University Press, 2007), 194.

[175]Stephen J. Lambakis addresses the dangers of continually using 'asymmetric labels' to describe threats as its own classical generality can render it irrelevant. Yet, its overuse does not render it irrelevant as an analytical tool to describe the approaches adopted by an enemy seeking to use methods not open to the traditional Western mindset. Stephen J. Lambakis, "Reconsidering Asymmetric Warfare," *Joint Forces Quarterly* 26 (December 2004): 106-108. Likewise, Colin Gray discusses the logic that all of America's wars have been asymmetric by virtue of a lack of symmetric opponent. See Colin S. Gray, "Thinking Asymmetrically in Times of Terror," *Parameters* (Spring 2002): 14.

solution to this problem – the continual application of resources and capability-based discussions, ignores its real issue.[176]

This continual application of resources has created an environment of overstretch. The 'long wars' of Iraq and Afghanistan undermined the planning assumptions upon which force development was based.[177] The retention by the United States of its global force presence while concurrently engaged has exacerbated the issue, leading to a military facing exhaustion. The greatest strength of the strategy of technological superiority lay in its ability to mass combat power and execute decisive strike. However, this era of overstretch has seen US and Western allied militaries adapt themselves as specialists for the current war and they are now ill postured for conflicts to come.[178] This creates a crossroads for strategists, caught acting like Pavlov's dog, with a response conditioned only for similar type conflicts.[179] Capitalizing on the experiences of

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[176]The advice provided to the President of the United States over increased troops amounted to little more than variations on a single theme rather than coherent civil-military advice. This inability to create strategic options for decision-makers reinforces the strategic dissonance with the military machine. A lack of informed military advice the executive apparatus is likely to make arbitrary and independent decisions lacking the unitary logic to provide consistency between policy and strategy. See Bob Woodward, *Obama's Wars* (New York: Simon & Schuster, 2010), i.

[177]This recognizes the view of the lack of balance between ends, ways, and means, coupled with the question of feasibility. See Harry Yarger, *Strategic Theory for the 21st Century: The Little Book on Big Strategy* (Washington, DC: Strategic Studies Institute, 2006), 60-68. While it addresses the need for two concurrent campaigns, defense guidance made little reference to the need for the global presence necessary to execute the Global War or Terrorism, compounding issues. See US Department of Defense, *The National Defense Strategy of the United States of America* (Washington, DC: US Government Printing Office, March 2005), 16. While this force construct was revisited in the QDR it is virtually impossible to coherently reframe force structure and capabilities while already committed, particularly when assumptions are made on continual economic growth to support it. See US Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: US Government Printing Office, February 2006), 35-38.

[178]In many respects it has also created a risk aversion mindset amongst operational level commanders, utilizing air and fire support to de-risk operations rather than traditional maneuver. Colonel Rupert Jones provides a first hand account of this approach, "we have become seduced by the easy availability of air and artillery support. Commanders are giving up maneuver in favor of fire support." Critically this dependence is changing the war fighting approach of Western militaries with significant ramifications for the next conflict. See Rupert Jones, "COIN in Afghanistan: The Tyranny of Fires," *Defense Tech* (26 May 2010).

[179]The lessons of history demonstrate that the maintenance of the status quo may cede advantage to enemies willing to capitalize on the problems associated with a military force uncertain of its future. From a US perspective, sailing with the prevailing wind may create the type of military force that entered

the past decade are essential, however inherent fallacies exist in viewing it as the recipe for success.[180] The multi-faceted nature of future conflict is likely to see the compounding effect of basing assumptions on these fallacious underpinnings.

Retrospectively judged by historians, it is likely that frozen decision-making and the manifestation of disconnected strategy and the application of force will define the decade since 9/11.[181] While argued as strategic successes, the realities embody a bottom up technology driven solution that has abandoned the traditional application of capabilities to a coherent strategy. Good tactics implementing technology have compensated for poor strategy.[182] This directly informs the nature of indifference towards change for the future. Worse, the illusion of success deludes military thinkers into positive self-deception for the future. Therefore, while the Western view of war may be bounded by intellectual reason, it is continually fought through a bureaucratic lens that reinforces this illusion of success.[183] Rather than a technological transformation of a

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Korea and emerged from Vietnam, fragmented and disenfranchised.

[180]From the historian standpoint, John Lewis Gaddis identifies the essential requirement to reflect on history in order to develop a theory for the future. A theory is thereby effective if it can explain reality, the necessary interfaces and provide a means by which to plan for the future using this historical approach to develop understanding. Critically, this view discusses the interpretation of theoretical underpinnings through output in a narrative forming the thread by which the military cultural construct is created. A military force is a thereby a coherent body that can inherently learn the wrong lessons through a lack of self-reflection and cultural bias towards the wrong identifiers for success. See John Lewis Gaddis, *The Landscape of History: How Historians Map The Past* (New York: Oxford University Press, 2004).

[181]Reflectively evident in the 2003 Iraq conflict, the competing egos on the global stage, ignorance of established institutional norms, and lack of coherent strategy echo more of a Greek tragedy than modern warfare. The retention and execution of unilateral power easily undermines regional policies as empty rhetoric, with long-term fratricide to these partner nations.

[182]For instance, the political rhetoric from decision makers talks of achieving strategic aims but suffers from impotence in clearly articulating them. The changing nature of the Afghanistan goals to a 'basic level of security' highlight the lack of coherence its second longest occupation in history. Critically, discussion of its inability to act as a haven for terror ignores the fact that this objective was broadly achieved in 2002. Afghanistan itself never represented the geo-strategic risk portrayed. See David Cameron, "Afghan Mission Accomplished," *BBC News Reporting* (16 Dec 2013).

[183]The Clausewitzian view is that war is not incompatible with intellect, yet at the macro scale Western militaries no longer fight with intellect but as bureaucratic machines. Intellect is reduced to the lowest common denominator. This creates an inherent reliance on experienced tradition rather than vision

force in contact, 'fire-fighting' solutions deliver best practice without their codification as institutional knowledge. The continuing effect is likely to be a lost flexibility in the cognitive core of how to apply resources to solve a problem, and a reinforcement of the centralized nature of decision-making.

Enabling New Ways of Warfare – Technology Equals Enhanced Capability

While the cynic is often validated retrospectively, trends equally demonstrate that technology has conferred military advantage to the United States since the end of the Cold War. It sits in a pre-eminent position as the most technologically powerful military force on the globe, outspending its nearest rival by a ratio of six to one.[184] Technology provides a reinforcing effect to this fiscal fortitude, ensuring a broad strategy of development, more of which is discussed in the subsequent section. Overall, the net effect is a more capable security apparatus, conducting extensive reconnaissance activities, directly linking these to action with little collateral damage.[185] This enables the increased compression of the kill chain from stand off positions far removed from the threat. Continuing increases to the precision characteristics of weapons systems is a trend that will only reinforce this ability. Coupled with this, enhanced situational awareness shapes the ability to control warfare from a more centralized position, which can arguably improve operational and strategic responsiveness. While the problems with this have been already outlined, this creates the ability for commanders at all levels to position themselves capable of affecting much greater depth to the battlefield, outside the effective range of enemy

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to enable the intent of technological dominance. For a discussion of the interplay of the nature of war and intellect see Carl von Clausewitz, *On War*, 75-6.

[184]James Hackett, ed., *The Military Balance 2010* (London: Routledge, 2010), 5.

[185]Hew Strachan, *The Direction of War – Contemporary Strategy in Historical Perspective* (Cambridge: Cambridge University Press, 2013), 189-190.

engagement.[186]

This enhanced situational awareness, coupled with command and control developments, has created a more agile and responsive framework for the employment of force. Enabled by the significant resources, flexible employment from an adaptive planning methodology is now the norm.[187] This factor is a direct evolution from the lack of flexibility exhibited in the military's inability to adapt to non-standard contingencies in the early 1990s.[188] Holistically, these enhanced the traditional strategic agility and power projection capabilities of the US, realizing dividends from the continual investment in platforms with global reach. These joint enablers have seen the greatest growth in the past two decades; the ability to operate at extended range affords a position of continuing advantage for the United States and its allies in strategic positioning for action and influence. It is this that enables the 'drone strategy' against terrorists in Pakistan, and the global perception that any anti-access/area-denial issues are not a problem for the US.[189] The expeditionary threat of force is real, albeit with differing thresholds for employment.

Matched against this political appetite for risk, this period has seen a dramatic reduction in friendly force casualty numbers, in comparison to previous conflicts.[190] Despite the tactical

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[186]For example, General Tommy Franks, CENTCOM Commander for Afghanistan operations post 9/11, did not feel the need to deploy forward into theater. In capability terms the situational awareness systems either enabled, or for the counter argument they fixed, the commander to execute operations from distance. See Ron Martz, "From Tampa, Franks on Top of the War: Separation Allowed by Technology," *Atlanta Journal Constitution* (18 April 2002): D-1.

[187]Bob Woodward, *Bush at War* (New York: Simon and Schuster, 2002), 6-25.

[188]See Paul Davis, *New Challenges for Defense Planning* (Santa Monica: RAND Corporation, 1994), 73-100.

[189]Bob Woodward, *Obama's Wars*, 1-7.

[190]This becomes a self-reinforcing cycle, as politicians become increasingly risk averse for US military casualties over time. President Bill Clinton's unwillingness to place US combat troops into Kosovo illustrates the relative lack of palatability for casualties, when effects 'can' be achieved through alternative capabilities. See David Halbertsam, *War in a Time of Peace: Bush, Clinton, and the Generals* (New York: Scribner Press, 2001), 423.

level casualties from the campaigns of Iraq and Afghanistan, even these have been reduced through enhanced protected mobility and increased tactical air capabilities to move casualties inside the perceived 'golden hour.' Somewhat counter-intuitively, outside of the two Iraq conflicts, the role of heavy ground forces has reduced. Enhanced firepower through other capabilities, coupled with protected mobility vehicles to re-position infantry on the battlefield, mean that effects can be brought to bear quicker than traditionally. In this, the role of the armored break in battle may be waning. This changes the traditional land-centric view of warfare as the fulcrum to base theories of warfare around, potentially invalidating assumptions on capability development. Yet, this is a supposed 'death knell' for land warfare that we have heard once before, during the supposed 'strategic pause' of the 1990s.[191]

Saved by the Bell – The Ignorance of Failure

So, that's it. Catastrophe is imminent. Western militaries are stuck in a causal loop that, while delivering some success, is doomed to failure. Akin to the Red Queen's race, we collectively are stuck in the middle, running fast to remain in the same position, awaiting the destabilizing effect of change. The only way to escape is to run twice as fast. Yet, this compounds the error further. The essence of this monograph is not necessarily that a strategy of technological superiority is invalid. Throughout history, the balance of technology, social change, logistics, and others have all waxed and waned in terms of importance to informing strategy.[192] Technology has enabled the current pre-eminence of the militaries of the US and its allies on the global stage. In its current guise, it may continue to enable this in spite of the realities of the future security environment. The importance comes in questioning this validity in

[191]Donald Kagan and Frederick W. Kagan, *While America Sleeps: Self-Delusion, Military Weakness, and the Threat to Peace today* (New York: St Martin's Press, 2000), 429-30.

[192]Michael Howard, *The Causes of War* (Cambridge: Harvard University Press, 1984), 101-114.

spite of this perceived relative strength. There is no single factor that could unpin this approach, yet aggregate failure could be the effect of ignoring the status quo, potentially running faster to remain in the same place, seeing exhaustion through cumulative fatigue.

However, remaining in the same place is likely to see a Georgian sunset rather than a Victorian transition in terms of Western, and explicitly US, global influence. Technological superiority has been allowed to supplant the logic of traditional strategy, inherently due to US positioning as number one. Paradoxically, this creates strategic vulnerability with a reinforcing effect that supplants strategy to the employment of systems. A capability based approach to the strategic environment this sits ignorant of the concept of relative advantage, with additional resourcing the mitigating factor for a lack of planning. The confluence of emerging threats act as disruptive agents, compounding this logic of continued strength. Attempting too broad a technological strategy to meet this problem may see a failure to adapt, or worse, the 'other' negating the strength of this technological might. Trying to remain in a position of complete technological superiority can lead to inferiority everywhere.

> "Well, in our country," said Alice, still panting a little, "you'd generally get to go somewhere else – if you run very fast for a long time, as we've been doing."
> "A slow sort of country!" said the Queen. "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"[193]
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> —Lewis Carroll, *Through the Looking Glass*

[193]Lewis Carroll, *Alice's Adventures in Wonderland and Through the Looking-Glass*, 220.

STRATEGIC SCOPE vs STRATEGIC STRENGTH

> The only defense against weapons of the future is to prevent them ever being used. In other words, the problem is political and not military at all. A country's armed forces can no longer defend it; the most they can promise is the destruction of the attacker.[194]
>
> —Arthur C. Clarke, *The Rocket and the Future of Warfare*

The application of technology to warfare is not an exact science. The successful outcome of future conflicts sits centrally to all preparations for war, in which military capability is a critical tenet. Explicitly, this represents the decisions on force structure and force posture to deliver capabilities to the battlefield. Yet, philosophies of deterrence and 'winning the war' diverge in terms of application and prioritization.[195] Anything other than a win at all costs mentality requires compromise in order to ensure continuing strategic advantage. In delivering this, technological advantage can mitigate the risk of pre-emptive action by providing a deterrent capable of delivering unilateral retaliatory strike, thereby ensuring a degree of stability through dissuasion. Yet, Napoleon demonstrated that without any form of technological revolution, the possibility exists to fight wars differently.[196] This demonstrates the fallibility to the logic that military advantage equals stability in a technological construct; organizational and procedural changes form part of collective whole that is effective military capability.[197]

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[194]Arthur C. Clarke, "The Rocket and the Future of Warfare," *RAF Quarterly* (March 1946): 61-9.

[195]See Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1959), 278-9.

[196]For an excellent discussion on the age of the Napoleonic mindset see Beatrice Heuser, *The Evolution of Strategy – Thinking War from Antiquity to the Present*, Cambridge: Cambridge University Press, 2010, 113-136.

[197]For Napoleon this required a high degree of situational awareness. For discussion on his cartographers and detailed reports and returns to enable command and control see David Chandler, *The Campaigns of Napoleon* (London: Weidenfeld and Nicolson, 1966), 367-378.

Establishing a baseline

For Napoleon, the technology of the battlefield was largely unchanged from Austerlitz to Waterloo.[198] In achieving the conceptual advances during early campaigns, translating these to military victory, Napoleon forced adaptation and learning by contemporary states. This juxtaposed the concepts of the maximum concentration of force against Austria et al, still thinking in terms of limited war. Napoleon's overall concept of flexibly concentrating his force, agnostic of the course of action, enabled his ability to dislocate Russia and Austria at Austerlitz and thus defeat the forces in detail. As the fundamental catalyst for change, Jena-Auerstedt in 1806 caused the reshaping of forces, attempting to understand the competing frictions of how a numerically superior military force lost to Napoleon's combined arms tactics.[199] Yet, even adaptation and increased structural resilience by the opposition was insufficient to initially spell defeat for Napoleon.[200]

A combination of rapid iterative transformation, Napoleonic overextension, and the significant increasing complexity of the battlefield eventually led to Napoleon's defeat. Napoleon did not adapt his approach as his enemy regained the advantage.[201] This period drove a golden era in military thinking as forces evolved further still from conventional and rigid tactics

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[198]For a discussion on the tactical improvements see Michael Howard, *War in European History* (New York: Oxford University Press, 1976), 76. Equal discussion is made about Napoleon's "more efficient use of well known weapons" in Richard Preston and Sydney Wise, *Men in Arms*, 4th ed (New York: Holt, Rinehart, and Winston, 1979), 189. An excellent overall summary of Napoleonic warfare is given by J.F.C. Fuller in *The Conduct of War: 1789-1961* (Cambridge: Da Capo Press, 1992), 42-58.

[199]Mark Calhoun, "Clausewitz and Jomini – Contrasting Intellectual Frameworks in Military Theory," *Army History* 80 (Washington, DC: US Army Center for Military History, Summer 2011): 22-37.

[200]For a detailed discussion on the War of the Fifth Coalition throughout 1809, including the Battle of Wagram see Robert Epstein's book. Critically, Epstein argues that the organizational changes undertaken throughout the Napoleon era change fundamentally changed the nature of war. This led to the emergence of the operational level of war and our current context of modern war. This sits counter to the role of technology as the catalyst for our current construct. See Robert Epstein, *Napoleon's Last Victory and the Emergence of Modern War* (Kansas: University Press of Kansas, 1994), 9-32, 171-183.

[201]See Basil Liddell-Hart, *Strategy* (New York: Meridian Books, 1991), 122-123.

in order to leverage greater mass on the battlefield.[202] Analysts of the period, most notably Carl von Clausewitz and Baron Antoine-Henri Jomini, sought to understand the true catalysts of change. This ensured coherence and logic that, whilst not lacking, remained nascent in the majority of previous writings. This created the descriptive and prescriptive, respectively, approaches to warfare, challenging traditional assumptions. The irony of today is the extensive reflection back to these theorists. This does not invalidate their utility, yet it is often the emergence of theorists such as these that enable militarized forces to adapt.[203] This currently sits as a somewhat vacuous space in the current environment.

Why is this important? The illustrative logic of three competing imperatives can be deduced. First, one can be misled by the illusion of overwhelming victory. Once an enemy starts adapting, decisive victory may not be achievable. Therefore, the position of relative advantage becomes a subjective and moveable constant within the overall global construct. This construct is defined by more than just normative understanding; emergence can develop and trigger cataclysmic changes ignorant of the status quo. Second, as an example to demonstrate the adaptive character of warfare, technology is not necessarily a key determinant for change. Reflection of the Napoleonic era suggests that at times of transformational change the balance may shift in favor of the cognitive application of capabilities, vice technology as the primary driver.[204] Thirdly, once capabilities, processes, or ways of warfare are introduced to the

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[202]Robert Harvey, *The Mavericks* (London: Constable, 2008), xxvii.

[203]The role of Liddell-Hart, Fuller, Douhet, and others during the inter-war years allowed the reshaping of forces. Even if it wasn't always applied correctly it created the seeds for rapid innovation in the face of conflict. The inherent complexity exhibited by the future environment does not preclude the need for constant revisiting of theories of warfare. Without it, compounded failure is more likely.

[204]From a reflective standpoint, the Napoleonic era can be seen as a confluence of the previous hundred years, explicitly the advances made by Frederick the Great. Frederick's military genius gave decisive victories over armies twice the size, assuring Prussian dominance in Europe. The changes brought about by Frederick, principally bringing discipline and tactics to what were still limited wars, are arguably a revolution in their own right, shifting away from the disorganized forces of the Middle Ages.

battlefield, they cannot be contained. Prussia improved its ability to fight through realigning its forces structure and developing a professional and educated force. It took the most effective aspects of Napoleonic strategy and warfare, and applied them in a manner to defeat Napoleon. However, this still sees strategy as responsive to crisis, although an overarching grand strategy may offer the solution for pro-active future proofing.

Role of Grand Strategy in Defining the Environment

> The first, the supreme, the most far reaching act of judgment that the statesman and commander have to make is to establish the kind of war on which they are embarking, neither mistaking it for, nor trying to turn it into something that is alien to its nature. This is the first of all strategic questions and the most comprehensive.[205]
>
> —Carl von Clausewitz, *On War*

This monograph's contention that strategies of technological superiority have overridden policy places traditional grand strategy as merely as bit player in a symphony of technological narcissism. Although originally viewing US strategic culture as a predictable constant in determining grand strategy, Colin Gray articulates the 'magpie effect' that has come to dominate US strategic thought. Silver bullet solutions that can be distilled on a single power point slide do not offer the necessary depth of understanding critical to coherent strategy.[206] Synonymous to Hew Strachan, both equally see the involvement of the military as integral to the development of true grand strategy.[207] Without it, the military is subsumed to the operational level of war, with policy made agnostic of coherent military advice, and military strategy focused solely on the here and now. This makes militaries only responsive to the driving forces of the day. Crucially for the

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[205]Carl von Clausewitz, *On War*, 88-89.

[206]Colin S. Gray, "Strategic Culture as Context: The first generation of theory strikes back," *Review of International Studies* 25, no.1 (1999) and his original perspective of strategic predictability see Colin S. Gray, "National Style in Strategy: The American Example," *International Security* 6, no.2 (1981): 22.

[207]For Strachan's views on the subject see Hew Strachan, *The Changing Character of War*, (Oxford: Oxford University Press, 2011).

military in an uncertain environment is a central logic of self-reflection; in times of transition this ensures assumptions on the application of military power are built on a logical foundation for policy makers.

Suggesting that this is a new phenomenon for the United States is equally wrong. In the latter stages of the Cold War, the Reagan administration sought to change the offense-defense balance of investment for deterrence. Counter-intuitively to many, yet wholly cognizant of wider grand strategy, a first or second-strike capability ignored the requirement to actually defeat or deter the incoming threat. The necessity for an effective defense in the Strategic Defense Initiative represented a radical departure in US strategic policy, yet it matched the environmental context.[208] This matches the view that strategy is a child of its time, set within a normative context supportive of the underpinning logic of deterrence. While rethinking deterrence in the post-9/11 and soon to be post-Afghanistan world, collective defense thinking must be set within this context. This ensures strategy, force posture, and technology adoption align coherently, thereby maximizing the position of relative strength afforded the United States and its allies. This form of strategic thought affords the US deterrence while concurrently maintaining institutional investment. Without it, advantage is ceded to the empowered enemy seeking to exploit this contradiction in the military-political interface.

This inherent difficulty in developing enduring grand strategy is something that has plagued leaders throughout history.[209] This is not an easy task, often marred by poor decisions leading to strategic impotence, questioning whether it is truly possible. However, difficulty in forming grand strategy does not excuse leaning on technology as a reassuring crutch, ignoring the

[208]For an excellent appreciation of Gray's views during the early part of his time in the Reagan administration see Colin S. Gray, "Warfighting for Deterrence," *Journal of Strategic Studies* 7, no.1 (1984) and Keith B. Payne and Colin S. Gray, "The Star Wars Debate: Nuclear Policy and the Defense Transition," *Foreign Affairs* (Spring 1984).

[209]Williamson Murray, Richard Sinnreich, and James Lacey, *The Shaping of Grand Strategy* (New York: Cambridge University Press, 2011), 4-5.

human, psychological, and political dimensions. Equally, strategists consistently disagree on the nature of grand strategic purpose and its inter-relationship to military strategy. However, true grand strategy provides the frame of reference for the future by which to nest coherent thinking across all instruments of power. This represents the interplay of grand strategy with the realities of the current environment; maintaining a vision of the future tempered by real constraints. Therefore, critical within this is a strategic choice model for identifying the strategic challenge, prioritizing the strategic effort, and concurrently assessing strategic risk. This is directly informed by, and concurrently informs military capability development through an iterative basis designed to support the creation of strategy. As a framework this defines the environmental frame of war upon which the military balance of power is executed.

Yet, in order to achieve their vision of the world, since the end of the Cold War Western powers believe that this requires a predominant position to enable influence, balance of power, and control.[210] Importantly, this predominant position must be maintained with no compromise in the near term. Playing the long game for foreign policy is somewhat dissonant to internal politics. This, in itself, is barely a strategy above that of the schoolyard bully wanting to stay on top, ignoring the need to understand the threat. A strategic vision must go beyond the immediate challenges.[211] Worse, the strategic nonchalance that Western powers have paid to developing long-term coherent security strategies, agnostic of administrations, undermines the perception the other has of this supposed positioning.[212] Equally, unrealistic strategic expectations do nothing

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[210]This view was similarly echoed at the end of the Cold War and little has changed. From a US perspective, anything other US dominance is likely to lead to global anarchy. Zbigniew Brzezinski, *Out of Control: Global Turmoil on the Eve of the 21st Century* (New York: Collier, 1993), 146.

[211]Ibid, 33.

[212]Changing thinking on the nature of the threat is critical to developing sound policy and military strategy. See S.J. Blank, *Rethinking Asymmetric Threats* (U.S. Army War College: Strategic Studies Institute, 2003), vi; J. F. Lehman, *America the Vulnerable – Our Military Problems and How to Fix Them* (Philadelphia: Foreign Policy Research Institute, 2000), 165-168.

but hamstring cogent thought.[213] Here, the military as an enduring entity deserves to take some blame. Ignoring the problem, exhibiting dissonance to the need to connect ends to means in a realistic manner is not the place that the military needs to remain. The onus on supporting the creation of grand strategy requires a military to understand the environmental frame of warfare, strategic choice paradigms, and develop applicable theories for the future.

Theory as a Solution – Wrestling for an Answer

Focusing on the future is difficult without an existential or quantifiable threat to Western security, and a lack of continual predictability makes it problematic at best. Theoretical predictability in warfare is only achievable for a limited time before battlefield advantage is undone through a myriad of external factors. However, a lack of predictability does not preclude militaries from re-shaping for the future. Thomas Kuhn reinforces this Clausewitzian view of a general lack of analytical certitude in defining a theory of war on which to develop a strategy for action in *The Structure of Scientific Revolutions.*[214] Kuhn's logic contends that the development of paradigms of warfare is an evolutionary process and that as development is made it is not exclusively necessary to understand the formulation of the initial underpinning theories. Competing theories remain validated against the sub-cultural understanding of the overarching paradigm of the inherent 'Western way of war.' From this, they will consistently reinforce this approach until a true crisis emerges that challenges this fundamental argument.[215] It is this that

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[213]A rethinking of US foreign policy in the years since the 'age of neo-conservatism' under the recent administration of President Bush must recognize the need for prudence. Shortsighted near-termism ignores the requirement for balance in terms of strategic choices with US hegemonic power. For a discussion of this core requirement see Francis Fukuyama, *After the Neocons* (London: Profile Books, 2006), 181-194.

[214]See Thomas Kuhn. *The Structure of Scientific Revolutions*, 84.

[215]Theories provide the wrapper enabling military action in a manner that does not require constant analysis. Yet, through incorrect assumptions militaries accept these theories as laws and therefore immutable logic.

allows the 'toolbox style' approach to theories, whilst remaining within a central overriding paradigm. While these may not be readily evident, the importance of historiographical reflection is necessary to recognize things that may not immediately be apparent.[216]

With a strategy of technological superiority axiomatic to this 'Western way of war', the question emerges as to what defines or should define its underpinning logic. The ability to adapt and optimize is limited by the theoretical foundation. Therefore, what is the general theory of war upon which to base it? The changes inherent to the globalized world make attempts to define a general theory of war difficult, predominantly due to differing purpose and scale from the macro to the micro.[217] This is compounded by the need to integrate political, economic, social and environmental factors into a relevant abstracted understanding. Therefore, the past half-century has seen military theorists attempt to fill this void of generality, developing specific theories bespoke to individual types of conflict.[218] Bousquet's description of the chaoplexic world may explain this by the fact that the world is in the midst of a military revolution, thus creating problems in accurately defining a general theory of war.[219] Unpredictability, interconnectedness of the global commons, and adaptability in threats are defining this era of rapid change by challenge traditional norms. The confluence of this 'age of the network' questions whether the nature of the conflicts of Iraq and Afghanistan has skewed war's unitary

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[216]This equally matches across to cultural interpretation techniques whereby cultures may not understand the existing values they are built upon and act in a constantly reinforcing manner. See Clifford Geertz. *The Interpretation of Cultures* (New York: Basic Books, 1973).

[217]This does not invalidate Clausewitz's view on the unchanging nature of war. The nature of war is violence through an act of force to achieve one's will and this is unchanging. Carl von Clausewitz, *On War*, 170-174.

[218]Attempts to explain conflict types such as insurgency, counter-insurgency, terrorism and others has led to the rise of military theories of war bespoke to a specific environmental context. Some, for example Galula and Trinquier, have bridged the boundary between a theory of war and one of warfare and the lack of a general theory of war for the time allows for an abstraction far beyond their intended purpose.

[219]Antoine Bousquet. *Scientific Way of Warfare: Order and Chaos On the Battlefields of Modernity* (New York: Columbia University Press, USA, 2010), 196.

logic. In this, learning false lessons for the future has potentially ignored warfare's evolutionary shift for new expeditionary applications of military power.

Recognition that full understanding will only come retrospectively, based on reflective analysis, allows the military professional to progress beyond the status quo of an unknowable future, frozen by the fear of the wrong decision. It thereby allows the necessary assumptions by which to develop a framework theory of warfare. At times of change such as this, emerging from a decade representative of a singular style of conflict, a unified way of thinking for the future is essential. Comparable to the inter-war period of 1918-1939, theories of war and warfare must fundamentally provide this unification of how to act in the face of complexity.[220] Only through this is it possible to capitalize on experience while concurrently shaping a force for the future. The challenge inherent to this is that most military professionals are more concerned with technology than the understanding of military theory.[221] As evidenced in Iraq and Afghanistan, technology is not the panacea to fill gaps within theory, strategy, or doctrine when faced by a complex environment. The ability to translate technological superiority into strategic superiority is conditional on achieving organizational superiority, whereby the organization itself provides the adaptability to meet the challenge. The difficulty in quantifying how to create this organizational advantage remains central to problem of how to retain relevance to a technologically deterministic strategy.

The difficulty in training a force for multiple approaches to warfare is echoed in the contemporary debate between Colonel Gian G. Gentile and John Nagl.[222] This is not a new

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[220]For a discussion on the challenge change during the inter-war period, especially for the French who comparatively rested on their laurels see Harold R. Winton and David R. Mets (ed), *The Challenge of Change – Military Institutions and the New Realities, 1918-1941* (London: University of Nebraska Press, 2000), 1-34.

[221]Milan Vego. "On Military Theory," *Joint Force Quarterly* 62 (Autumn 2011): 59-67.

[222]For a summary of their contemporary debate, see the video of their debate at Grinnell College, Counterinsurgency and the Future of Afghanistan (22 April 2013), available online at

problem and is endemic to all military forces, outlined most clearly in Frank Kitson's *Low Intensity Operations* and more recently in Brian Linn's *The Echo of Battle*.[223] The preclusion of a military towards high intensity operations, or an inherent need to return to this type, is likely to prevent a military force from coherently training for these concurrent competencies. This does not make the concept of a multiple approach invalid but necessitates a level of investment to take the road less travelled. The chaoplexic enemy is likely to thrive in the lack of agility existing between the end of one conflict and strategic decisions on the nature of the future security environment. Flexibility and dynamically adaptable forces cannot be created after the fact.

Theoretical Strategic Advantage

This ability to afford strategic strength while concurrently mitigating the strengths of the threat features centrally to military capabilities. During emergent change the ability to balance capability choice, in advance of trending tendencies, is increasingly difficult. What is the best technology to invest in? Is it best to invest now or allow the market to mature? Are offensive or defensive capabilities waxing or waning in pre-eminence? The list of competing questions is endless. Related to technological uncertainty but on a broader scale, strategic uncertainty sits at the nexus of policy and military strategy. No single strategy is capable of guaranteeing future success in warfare, each hamstrung by Jervis' logic that war becomes more likely with waxing

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http://smallwarsjournal.com/blog/debate-on-counterinsurgency-gentile-vs-nagl (accessed 23 February 2014). While fairly one dimensional and decidedly repetitive in its analysis, Gian Gentile's recent book offers a current perspective on the divergent nature that the US military has taken to counter-insurgency. See Gian P. Gentile, *Wrong Turn: America's Deadly Embrace of Counterinsurgency* (New York: The New Press, 2013).

[223]Both Kitson and Linn recognize the inherently difficulty that exists in attempting to adapt a force already in conflict, together with the problem of identifying what you should train for in the absence of an emergent threat. See Frank Kitson, *Low Intensity Operations* (London: Faber and Faber, 1971) and Brian Linn, *The Echo of Battle – The Army's Way of War* (Cambridge: Harvard University Press, 2007), 204-7.

offensive capabilities.[224] Competing strategies can thereby easily undermine military advantage by creating a fractured capability development program too focused in the near term. History's lessons evidence that a lower technology force can counter a high technology force provided they have invested in select high technology.[225]

Equally, as evidenced by the introduction of many new capabilities, the provision of temporary advantage is transient. Emerging military capabilities quickly become a necessity for technologically dependent forces to retain at least parity in the security environment. Competitive rivalry within the technological space creates a continuous exchange of action and counter-action to achieve relative advantage.[226] For example, China is currently executing a military technological strategy specifically designed to mitigate the recognized strengths of the US. This potentially forces dynamic responses to create equilibria for stability, until action by a single actor creates de-stabilizing conditions through over response. This battle for technological dominance sees rapid iterative development that could enable the re-emergence of mass the determinant of conventional warfare. The ability to acquire sophisticated technologies is enabled through the diffusive effect of globalization, thus potentially making it easier to acquire and mass-produce previously considered advanced capabilities at lower costs.[227] Exacerbating the

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[224]Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30, no.2 (January 1978), 167-214.

[225]For a clear example of this in an expeditionary profile see Colonel Ali A. Jalali and Lester W. Grau, "Expeditionary Forces: Superior Technology Defeated – The Battle of Maiwand," *Military Review* 81 (May-June 2001): 71-82. Their discussion of the defeat of the British forces by a technologically inferior Afghan force illustrates the problems of overextending a high technology expeditionary force. It led to the unnecessary loss of a whole British Brigade.

[226]For further discussion on the Chinese military strategy see Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China* (Washington, DC: US Government Printing Office, 2013).

[227]This diffusive effect of military technology and the inherent long-term risks to the current dynamic of military power is detailed extensively by Michael Horowitz in *The Diffusion of Military Power* (New York: Princeton University Press, 2010), echoing that of Joseph S. Nye, *The Future of Power* (New York: Public Affairs, 2011).

intensity of the rivalry to dominate technology, this creates problems for a US strategy of technological superiority in its ability for prohibiting access and retaining the competitive edge.[228] A model of unlimited resources that attempts to outlast competitors, akin to the Cold War, requires continual investment in an age where technological development cycles are measured in months rather than decades.

Time itself is therefore a factor contributing to this strategic uncertainty in military technological development. Supposed 'game-changing' technologies can take time to deliver effectiveness to any battlefield. The congruence of the technology itself, the concept of employment, and the problem set it is designed to overcome, all contribute to the definition of effectiveness.[229] Throughout the Cold War this strategic appreciation was somewhat easier, with research and development by the military industrial complex driving the diffusion of technology into the commercial space.[230] However, the commercial sector is now innovating at a pace that is more analogous to the industrial revolution of the nineteenth century.[231] Innovation from the commercial space is now driving the development within the military industrial complex. In overall terms this is beneficial to military forces writ large, however investment is needed at the

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[228]An essential characteristic of the Cold War, to supplement the aggressive pursuance of superior technology, was to deny the same technology to opponents. This was achieved through rigid export controls and denial of access to technological secrets. This enhanced the strategic advantage afforded by the superior technology, creating an increased lag time before diffusion amongst threat actors. The globalized nature of the world now, coupled with rapid technological development cycles, has eroded the ability to provide this advantage as an augmenting effect.

[229]The current effectiveness of Remote Piloted Vehicles provides an enhanced capability to global counter-terrorist operations, enabling real-time responsive precision strike through a persistent intelligence and weapons platform. However, the Predator platforms were introduced in the mid-1990s, yet truly became 'game-changing' in the post-9/11 era.

[230]This reinforced the view that technological dominance was both possible and a necessity to gain the edge over an adversary. As such, during the 1990s this became a matter of presumption. See Andrew Feickert and Stephen Daggett, "A Historical Perspective on Hollow Forces," *R42334* (Congressional Research Service, 31 January 2012), 5.

[231]Commercial Innovations of the 19th Century such as the railroad and telegraph directly reshaped the context of warfare at the time, enabling enhanced command and control and the ability to concentrate forces rapidly to the battlefield through exterior lines. See Shawn Brimley, Ben Fitzgerald, and Kelley Saylor, "Game Changers", *Disruptive Innovation Papers* (Center for New American Security, 2013), 9.

interface between the military and commercial environment to translate these advances into military advantage in the operational space. Difficulties are compounded in a fiscally constrained environment when the power to influence this complex wanes. Business is not incentivized to research and retain development into new or enhancing existing capabilities when the fiscal growth of this capability driven environment is on an ill-determined timeframe. This sits agnostic to the pre-eminence of the threat as a driving force for any technology strategy.

Multiple competing forces therefore bound strategic choice and the ability to maintain a position of technological superiority. These are all bracketed against the fact that military superiority does not equal military omnipotence. Offensive or defensive actions within the environment create the conditions for the maintenance of a defendable position. This defendable position is one that solidifies the Western view of continued technological superiority. A generic approach to assist in understanding the competing nuances of technological strategies is illustrated in Figure 1. This is a framework for strategic choice.

The competing logic of strategic choice is in meeting a range of threats with sufficient capability to initially deter and, if necessary, defeat in an offensive manner, without appearing aggressive. This forms the essence of preferred Western defensive strategies. The maintenance of enhanced offensive capabilities rationally deters actors from using military force against them. The underpinning logic is that capabilities meeting the broad threat streams are inherently adaptable enough to meet the scope of narrow or niche requirements. Yet, this assumes risk in understanding the nature of high tempo operations and adaptive changes necessary to afford real time advantage in contact.

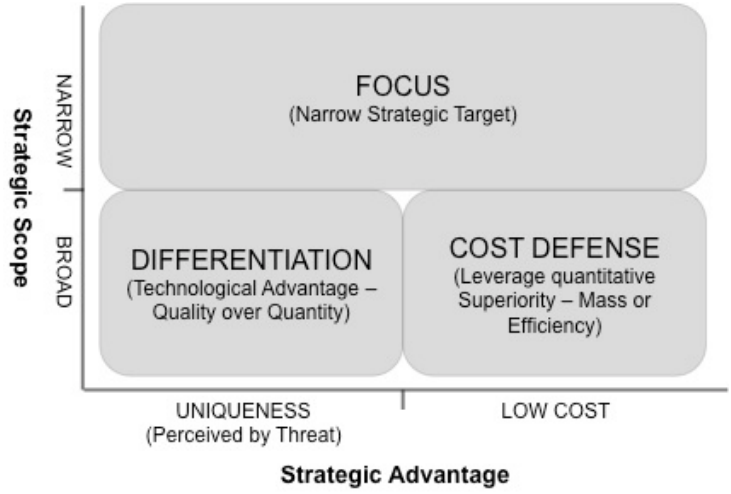

Figure 1. Competitive Defense Strategies[232]

Source: Created by the author.

Each of these generic strategies can offer an approach to technology through which to achieve strategic advantage in the security environment. The point is to pick one and stick with it. Akin to the Cold War, these represent consistent logic upon which to base a capability development strategy to negate, and if required, defeat threats over the long term. Cost Defense and Differentiation offer alternatives to attempting to achieve military advantage against a broad base of national security requirements. Cost Defense provides advantage through aiming to have defense aggressively enabled by a rationally efficient strategy designed to maximize the internal strengths of nation. This seeks to maintain the status quo in terms of military advantage by ensuring that it remains ahead of the average threat. Through this approach it is possible to thereby develop a lower cost security model, potentially with greater mass on the battlefield. Technological update and integration is achieved in a broad manner through an environmentally

[232]A theoretical construct adapted and developed from Michael Porter's Generic Strategies Model for competitive strategies in business. See Michael E. Porter. *Competitive Strategy* (New York: Free Press, 1980), 39.

deterministic mindset.[233]

Taking a more technologically deterministic approach, a Differentiation strategy qualifies the military capabilities so that they are unique against the security environment. Exclusivity of access to military technology is a defining tenet in controlling the driving forces that seek to negate advantage. However, this approach is multi-faceted, equally enabled through soft power to ensure the perception of superiority, even if the technology is broadly the same. Requiring a strong military industrial base, an unlimited resources model, developing military capabilities at the forefront of technology, can yield continuing military advantage in the long term.[234] These two approaches in Cost Defense and Differentiation create the conditions by which to develop a military security solution with a broad strategic scope. A Focus strategy is designed against a much narrower paradigm, tailored specifically against a particular threat(s). Utilizing Cost Defense or Differentiation strategies as appropriate, it is possible to prioritize Defense development in a manner that achieves superiority or sufficient advantage in a certain area. In this instance a force may be highly effective in certain environments, however may lack the flexibility or adaptability to meet a broad strategic scope. As a strategy this requires a clear understanding and prioritization to ensure that the approach is not too narrow. Recognizant of the myriad of threats, coupled with collective security agendas, prioritization of likely contingency tasks above symmetric threats forms the realist solution to this problem.

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[233] Environmental or Social determinism see technology as the dependent variable. Technology choices are made in order to further interests, thereby enabling Cost Defense to selectively advance its military force. In terms of new, or emergent, revolutionary technology this can enable, dependent on capital investment, rapid advancement ignoring interim cycles of technology.

[234] The perception of military advantage for a Differentiation strategy is conferred by the rapid adoption and integration of technology more rapidly than an opponent. This enables broad scale advantage, despite the opponent having access to similar technological advances. Uniqueness is determined by the threat as the necessity of alliance structures for collective defense requires a commonality in certain defense capabilities.

These three strategies represent viable approaches for Defense capability development aimed at maximizing military advantage in the security environment. However, there are inherent risks associated with each. Yet, the biggest problem is for a military force to be 'stuck in the middle' in its understanding of how to achieve strategic advantage against its strategic scope.[235] Few nation-states are capable of truly maintaining strategic advantage against all threats and the effect of the actions of others can undermine a strategy. For example, the qualitative use of technology by the US throughout the Cold War initially mitigated and then contained the numerical superiority of the Soviet Union. From a rivalry perspective it forced the Soviet Union to develop and match the capabilities, despite their assured quantitative advantages in a conventional conflict.[236] They found themselves stuck in the middle, incapable of truly maximizing any strategy, and wholly reactive to the United States over the long term. This negated their strategic advantage and led to strategic ruin through overextension and the misapplication of resources.[237]

The current environment sees many countries adjusting the Defense strategies within a construct less about developing capabilities for a broad strategic scope. In some cases recognition that capability parity is manageable within a reduced budget is redefining the traditional place of Western militaries, such as France with a focus on peace enforcement rather than war fighting. For the US, a continuing strategy of technological superiority can represent something 'stuck in the middle.' The rate of technological advance is rapidly eroding the current

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[235] 'Stuck in the middle' – see Michael E. Porter, *Competitive Strategy*, 41.

[236] See Harold Brown, *Thinking about National Security* (Boulder: Westview, 1983), 225-232.

[237] Many of the 1980s discussions between Presidents Reagan and Gorbachev were always in US favor due to the Russian perception at the time. Overextended economically and militarily they viewed the US as having a capability to deny second strike. This directly impacted on their strategic negotiations and contributed to the end of the Cold War. For analysis on the Soviet view of the Strategic Defense Initiative in the context of military superiority see Mary C. Fitzgerald, "The Soviet Military On SDI,' *Professional Paper 461* (Virginia: Center for Naval Analyses, 1987): 3-7.

strategic advantages of its high-technology forces, and its relative global position and interests means that it will always have more than one significant threat.[238] Therefore, this requires greater investment to stay ahead of the technological power curve. Without effective prioritization, akin to the Soviet Union, this could lead to ruin for the Western Way of War in the longer term. However, in a strategy of technological superiority it is more likely that the intensity of the rivalry will act as the determinant for the offense-defense balance, rather than military strategies of capability development.

In Reflection – So What, Which Means, Therefore….

> Tools, or weapons, if only the right one can be discovered, form 99 per cent of victory… Strategy, command, leadership, courage, discipline, supply, organization and all the moral and physical paraphernalia of war are nothing to a high superiority of weapons – at most they go to form the one percent which makes the whole possible.[239]
>
> —Major General JFC Fuller, *Armament and History*

Clearly, on reflection, Fuller was wrong. Blind faith in technological advantage does not obviate the need to consider the wider wrapper of warfare. Extreme views of this type ignore the realities of the nature of the enemy and the environment, creating technologically narcissistic mindsets. Yet, Fuller was a product of a period of significant emergent change, redefining the theoretical foundations for warfare. Critically, in a time period that saw strategic choices seek to avoid confrontation and significantly reduce Defense spending, Fuller's theories shaped the development of armored warfare.[240] This contributed to the success of German operations into France in 1940, ironically leading to the evacuation from Dunkirk of the very same British forces Fuller had attempted to influence. In many respects this reaffirms the logic that it is confluence

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[238] The lack of a single scenario to focus on is well articulated in Betts' comparison of 9/11 and Iraq. Richard Betts, 'The Two Faces of Intelligence Failure: September 11 and Iraq's Missing WMD,' *Political Science Quarterly* 122, no.4 (2007): 591.

[239] J.F.C. Fuller, *Armament and History* (Cambridge: Da Capo Press, 1998), 25.

[240] Significantly, Heinz Guderian paid with his own money to get Fuller's book translated into German. See Ronald Atkin, *Pillar of Fire: Dunkirk 1940* (Edinburgh: Birlinn Limited, 1990), 26.

of the technology, its concept of employment, and problem set, that create the conditions for truly successful employment. In this sits its effectiveness, juxtaposed against the unifying premise that any misunderstanding can derail the cart.

However, this does not deny the fact that a strategy of technological superiority can work if applied correctly. Occasionally, if the scale of advantage is so large then Fuller's maxim can hold true. Yet, unless this power is employed in a manner that prevents any reprisal, through destroying all ability of the adversary to do so, the advantage is likely to be short lived. The adversary, akin to Iraq and Afghanistan, always seeks novel indirect approaches to nullify strength. The absolute solution is that demonstrated by the Athenians to the Melians, leveraging all capabilities to ostensibly remove the possibility from existence.[241] However, this does not sit well within the current construct of western liberal institutionalism. Equally, simplicity is definitely not the panacea to defeat a complex open environment unless one is capable of controlling the dependent variables. Therefore, the requirement exists for a responsive approach to the changing conditions, returning to the inherent problem of technological superiority supplanting policy.

This is not the world of the magic wand. It is inherently difficult for reshaping to occur by a state that remains stuck in the middle with a strategy of technological superiority. Emphasized by the attempts to use process and technology together in Vietnam, coupled with the application of quantifiable metrics to stability operations, this can give rise to paradigmatic crisis. Worse, the increasingly complex and interconnected nature of the world means that in the absence of grand strategy, technology continues to provide the crutch for decision makers. Changing this logic in a resource-constrained environment is equally problematic. Single service and agency parochialism are likely to erode any gains made in an effort to maintain influence

[241] See Melian dialogue in Thucydides, Robert Strassler (ed). *History of the Peloponnesian War* (New York: Free Press, 2008), 351-357.

over policy makers. Arguably, reacting too fast in executing any change will undermine the overall effectiveness and likely present opportunities to threats. For the US, transformation in the 1990s came with the tenets of full spectrum dominance, reinforcing this logic.[242]

However, the lack of a crystal ball for the future or a magic wand to reinvent evolutionary theory does not mean that developing new approaches to thinking is pointless. Agnostic to domain, Figure 2 provides a conceptual framework to understand the nature of military technology within an environmental frame of war. Leveraging concepts of competitive advantage in technologically driven businesses, and an informational approach to warfare, it provides a way of understanding the competing forces that affect a continuing strategy of technological superiority.[243] Its relevance when considering a strategy of technological superiority exists at the strategic state level interface and the ability to remain ahead of competing powers. The intensity of technological rivalry represents the central driving force that currently sits at the nexus of understanding the grammar of future warfare, summarizing many of the observations through the monograph.

[242] See CJCS, *Joint Vision 2020* (Washington, DC: US Government Printing Office, 2000), 6-11.

[243] Porter's competitive logic seeks to define a framework by which to analyze, understand, and develop business strategy within a competitive marketplace. For further discussion see Michael E. Porter. *Competitive Strategy*, 3-32.

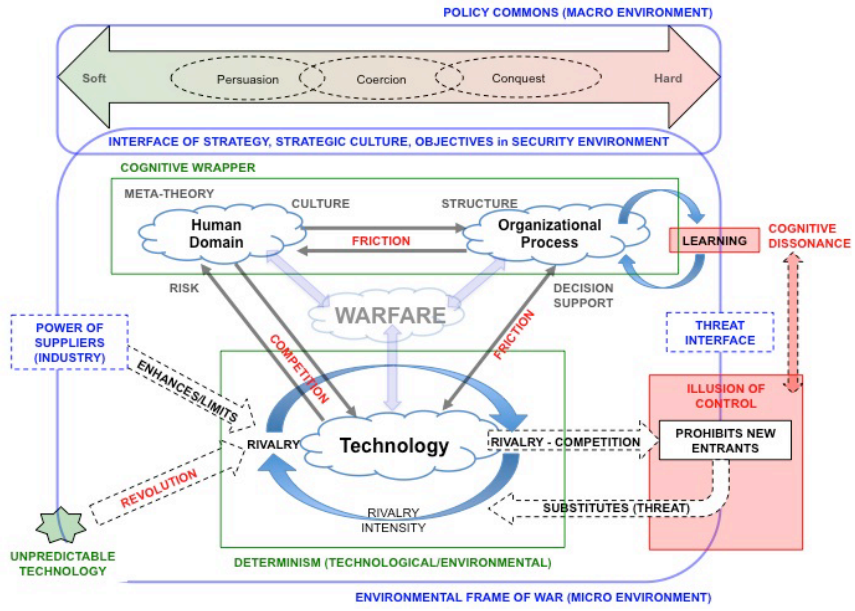

Figure 2. A Theory of Military Technological Advantage
Source: Created by the author.

The competing nature of the driving factors outlined sets the environmental frame of war through which to conduct future strategic planning to develop military power. While a threat interface is identified, overlaying enemy understanding of this view of competitive rivalry in the security domain develops understanding of its intensity. It is this intensity that needs to be the fulcrum for changes to military thinking as it allows technological development to be focused at the requirement not the ethereal aspiration. From an organizational standpoint, structure cannot be allowed to trump function, but equally technology drives processes or process drives technology, not simultaneous exchange. This inherent friction can either enhance or reduce an organization's effectiveness, driven by the overriding consideration of decision support, nested against a framework for organizational learning. Without it, cognitive dissonance through the belief of an illusion of control over technological availability to competitors will override logic, undermining any attempts at strategy. Equally, often attempting to control high technology through erecting barriers to entry will see substitution by threats focused against the vulnerabilities. This sits as a double-edged sword as the illusion of control can also emerge in the

absence of a quantifiable threat; meanwhile elements are developing techniques to negate technological advantage.

In countering this, from the perspective of the human domain, this creates the organizational structure to support technological advantage, but cannot be defined by it. This is the space current strategies place forces now, with new specializations emerging for each new thread of technology or capability. This sits ignorant to the effectiveness that comes from understanding technology, applying and re-applying it in innovative ways, acting as the cognitive wrapper for modern warfare. Ultimately, as a form of risk aversion, this can act as significant friction to warfare, with increased probability of information overload at the multiple barriers between specializations. Equally, the power of industry can have either a strengthening or destabilizing effect in supporting strategies to deal with technological rivalry. However, this requires an industrial base flexible enough to respond to the changing environment, without it seeking its own advantage through high costs to government. Recognizing this, industry must sit at the boundary to our understanding of the frame of war and warfare for the future. The past decade has blurred the traditional procurement boundaries, leaving industry producing cutting edge capabilities that sit agnostic to wider strategy and threat, defeating the need for coherence in developing against prioritized threats. Overall, when looking to the future it is the interplay of all these that can sit as limiting or enabling, noting that unpredictable technology can bring down the house of cards through revolutionary redefinition of the environment.

Cracking Open the Champagne – Has Theory Solved It?

Has anything new been written thus far? Frankly, no. Tackling the inherent status quo of strategic vulnerability recognizes the benefit of utilizing thinking that has gone before. Organizational structure, enhanced cognition, and flexible systems are likely to be the future weapons of war. Recognizing inherent problems, thus enabling dealing with threats and enemies means creating agility within one's own system. Realizing that theories of what we currently call

war were put forward by people with no more intelligence than anyone else challenges the constant, empowering the individual innovator. However, this requires rethinking theories of war and warfare for the future manifesting itself in the doctrine that defines military application, continually reflective of policy and strategy.

Only here will forces position themselves to bridge the gap against the more agile enemy whose modus operandi is to engage only weaknesses and vulnerabilities through an indirect approach. Inherent complexity exists in challenging conventional theory of strategies of technological superiority, especially now with previous core competencies confused and entangled. Inherent uncertainty means that a prescriptive methodology is less appropriate as any theory is likely to be ill conceived to meet all future threats. However, Rome was not built in a day.

> The primary purpose of any theory is to clarify concepts and ideas that have become, as it were, confused and entangled. Not until terms and concepts have been defined can one hope to make any progress in examining the question clearly and simply and expect the reader to share one's views.[244]
>
> - Carl von Clausewitz, *On War*

[244] Carl von Clausewitz, *On War*, 132.

WHERE TO NOW?

> It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity…. we had everything before us, we had nothing before us….in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or evil, in the superlative of comparison only.[245]
>
> —Charles Dickens, *A Tale of Two Cities*

Concluding Reflections towards a New Future

Akin to the epigraph above, it remains easy to describe the current period in terms of superlatives, either for success or failure. However, abject failure is not inherently apparent or imminent. In this case, it is rare to examine a force when it is at its strongest, seemingly without a viable competitor. Against this perceived strength, time for pro-active action is the strategic variable that cannot be replaced. Therefore, doing nothing should not be seen as an option, despite reluctance to see past the current technology of military might and qualitative superiority. Assumptions of near certainty to planning must equally be removed, as they defer change until newer 'cutting edge' capabilities become available. Visions of future warfare are simply that – predictions against a multi-variable environment. However, these cannot sit continuously aspirational without being grounded in reality.

This paradoxical strain is not new and represents the tension between developing a force based on quality or quantity, reality dictating that both determine military power. At present, the United States, and by proxy its allies, are vulnerable to overstretch through any sustained operation. It is this inherent potential to overstretch through any activity that compounds the ability to get out of the middle, especially when increasing force size is not an option. Cries of 'et tu Brute' by US policy makers may become more familiar as traditional planning assumptions for

[245] Charles Dickens, *A Tale of Two Cities* (Oxford: Harper Collins, 2010), 1.

allies are invalidated by this logic, abandoning the US at the point they are needed most.

Clearly, the 1990s view of RMAs is not the answer, although current Western forces sit in the legacy of this era conflated with the past decade of pre-dominantly counter-insurgency conflict. Inefficiencies of this thinking are recognized, however it remains a simple solution to the complex space of upcoming warfare and its logic informs institutional reinforcing thought.[246] This compounds strategic choices as often historically reflective and self-referential rather than progressive and transforming. Yet, the philosophy of recognizing exponential trending changes in technology and 'riding' the growth in technology remains critical. This is the driving force for research and development. However, true technological superiority is only ever really successful against non-nuclear weak opponents and commits forces to achieving technological surprise, itself a difficult construct in the globalized world. Simplicity as the solution to defeating complexity requires the continual application of resources for success, often proving inadequate. Without these conditions, technological asymmetric advantage is unachievable in supporting a defense informed foreign policy agenda. At worst, the logical assumption of symmetric containment is invalidated before the military instrument is sought to influence the situation.

In tackling this future, no state can ever eliminate all vulnerabilities. To do so sits counter to the Western construct of liberal institutionalism as a global model, ignoring the traditional arc of the waning historical influence of hegemonies over time. The development of military capabilities means making choices. Unconstrained planning is non-existent outside of a global existential conflict. Accepting risk comes from understanding and prioritizing threats. Often, many defense planners associate US vulnerabilities with ill-defined nebulous threats, or the strategies of unidentified enemies. This restrains our ability to meet future challenges credibly, ignoring the need to narrow focus and prioritize against the intentions most explicitly

[246] Deborah A. Stone, "Causal Stories and the Formation of Policy Agendas," *Political Science Quarterly* (Summer 1989): 288.

focused against those targeting vulnerabilities.

This lack of easy advantage does not invalidate all logic of current Western strategies of technological superiority. It fundamentally remains the right consideration to maintain overwhelming military dominance in support of deterrence effect in an unstable world. It is this that provides the wrapper of security that supports democratic peace theory. Theoretically, this will equally maintain the military instrument as an easy choice for policy makers, while mitigating the risk of casualties in use, but only if delivered with strategy informing military use. However, ignoring or disaggregating responsibility for strategic vulnerabilities negates any advantages offered through military dominance. It is likely that, while not guaranteeing victory, an increased assessment of the vulnerability space is the key to unlock future warfare, informing the master narrative of western logic.

This assessment can and must drive a more holistic approach to warfare. Investing in certain areas of military capability will see trade offs in others but must be unified to avoid being out-maneuvered by new and emerging modes of warfare. This will need the military instrument to shift its approach from a reactive manner to pro-active strategy driven solutions in achieving national policy objectives. Sycophantic obedience may suggest that this is how we do things now. It is not. The ability to disengage from the last decade of conflict has been marred by the confluence of operational effectiveness and the disregard for coherence at the military-political interface. To allow this to continue while tackling new threats does a disservice to the sacrifice in blood of the soldiers, sailors, airmen, and marines that have fought in conflicts that suffered a dissonance in coherent strategy. This dissonance ignored the theoretical underpinnings that support the application of military power, making operational effectiveness the determinant of success.

It is in this threat space we must collectively strive for caution. Traditional large-scale, high intensity, conventional warfare akin to Operations Desert Storm and Iraqi Freedom still

remains wholly viable. In this, high technology forces developed through strategies of technological superiority maintain dominance; next generation weaponry is likely to provide parity at best in the near term. However, the net effect of the past decade has created forces lazy in the first principles that make a force 'great.' The luxuries afforded by a singular focus to enemies in the past are most probably gone, despite increased tensions with Russia. Detailed surveillance and intelligence, coupled with near real time reporting to the lowest tactical level, cannot be generated overnight for future conflicts. This requires a refocus of current forces and commanders to avoid risk adverse strategies to the overriding need to close and engage with the enemy. Enemies, especially those building forces around the principle of mass, will remain willing to take large risks to achieve decisive action. Lethargy to the understanding of how to apply combat power effectively, in spite of risk, is critical to achieving the decisive outcomes current strategies of technological superiority dictate.

When intervening in smaller conflicts, likely driven by humanitarian or right to protect agendas, security problems will see a lack of overmatch by competing factions, with porous borders allowing the influence of numerous external actors. Struggles may more often be amongst elite power brokers, yet manifest as local security dilemmas conflating along various sub-national lines. Escalatory violence will see the emergence of threats that cannot be contained at source compounding traditional peace enforcement activity, potentially seeing the need for more imperialistic peacemaking. While more decisive, this sits counter to Western liberalism and balancing military advice to policy makers becomes inherently critical. This advice and military strategic thought must consider preventing military options running counter to long term policy objectives through mission creep and protracted entanglement. This is not an insurmountable problem, but requires early engagement across all instruments of national power and is something that still sits alien to militaries that are focused on decisive victory.

Even here in reflection, contradictory themes emerge on how to provide policy makers

the inherent flexibility and adaptability they demand from the military instrument. Reactive subservience, ignorant of strategy, is not the answer. Only coherence in developing military forces capable of executing the full range of tasks, from forward engagement to large-scale conventional war fighting can achieve this. However, mutual exclusivity in mission roles and structures is not the solution for this development, especially within expeditionary forces at very high readiness. While it will seem antithetical in a world of disruptive technologies, increasing specialization in US military forces ignores the position its policy makers are asking for, reinforcing boundary difficulties between specialties. Technological uncertainty cannot be allowed to continue to create strategic uncertainty. Over-specialization against a narrow strategic scope creates dissonance to wider action and ignores the relative position of the US as number one.

Against this, the spread, complexity, and diffusion of technology are compounded by the short life cycle to military technology. The balance between training the human component, thus equipping them with the skills to do their job, versus specializing the military is difficult. The need is for mentally agile professionals with expert knowledge. Therefore, forces will require the ability to exploit and integrate rapid technology advances outside of traditional procurement cycles. Yet, this must be in a manner that is 'good enough.' It is recognized that anything less than 'cutting edge' will inflame US military culture. However, continual over-estimation of the requirement drives the overreach that creates the military budget deficits; attempting to keep pace in a fiscally constrained environment equals strategic vulnerability. This will need agreater understanding of risk, especially when integrating into the complex battlefield. The key is to maximize the leveraging of technology rather than continuing to see the military as the driver for it. That situation has changed. Creating areas of critical idea density will provide returns exponential to the effort put in and it is this that will ensure effective vertical and horizontal management in achieving objectives.

It is this intellectual capital that is needed to provide flexible management of the flat and fast information domain. Without it, victory will suffer an unpalatable price. Military personnel represent the center of gravity of any military. They provide the interface that understands intent, responds to change, and executes military orders to meet the strategic imperative. Thus, they cannot be allowed to lose their way in the era of the complex opponent. A disenfranchised military force that is afraid to innovate in warfare will hemorrhage its talented people to employment where a pioneering and expeditionary mindset is truly valued. Innovation must therefore be seen as a positive action for the future in tackling the emergent change that is congruent with technology and threat. As an overall driver, this balance of the human and moral components of warfare against the technological provides the way to create the inherent flexibility needed.

For the remaining cynic to a need for change, while this author does not profess to have all the answers, there should not be a lamenting for a loss of the current but an enthusiasm for reshaping the military instrument. Revolutionary change is sometimes necessary to enrich and develop a profession, yet pro-active anticipation can make change evolutionary and therefore more effective in the long-term maintenance of military power with little drop in capability.

A Final Note of Caution

Technological superiority remains a strategic choice. The current US military technological dominance is a privileged position. There is no inherent right to maintaining the status quo; an inadequate attention to the strategic implications of emerging technologies is likely to create strategic impotence. Yet, technology is but a single part of the environmental frame of war and should always sit subservient to wider logic. Continuing with it as the driving factor is equal to laziness. Failing to appreciate these implications means that decision makers cannot decide on the correct strategy. The military instrument cannot allow itself to ignore its place in informing the need for strategic adjustment.

So what. Against adaptive enemies of varying capabilities, pick a military strategy. Stick with it, providing responses tailored to the range of enemies. Develop coherence across inter-governmental agendas ensuring military vulnerabilities are not the root cause for wider security dilemmas. Continuing to remain 'stuck in the middle' ignorant to the need for military strategy is tantamount to failure.

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